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## PRIMARY CARCINOMA OF THE FALLOPIAN TUBE *


E. E. MONTGOMERY, M.D.
Professor of Gynecology, Jefferson Medical College
PHILADELPHIA


It is a well-known fact that no portion of the body is immune to the invasion of carcinoma. The more ready exposure of certain portions of the structure to traumatism renders its appearance in such tissues more probable. It is not surprising, then, that the cervix, exposed as it is to frequent injury in coitus and the course of pregnancy, should be the most frequently involved.

The many changes to which the active cellular structure of the ovary is subject render it particularly vulnerable to cancer, and authorities agree that probably 20 per cent. of ovarian tumors will prove malignant. Situated as the tube is, between two such vulnerable organs and in direct functional relations with them, it could scarcely be seen how extension from these structures to the tube could be avoided.

Notwithstanding the frequency of cancer in the ovary, the investigations of Orthmann would seem to show that carcinoma is rarely transmitted from it to the tube. It is true that 8 per cent. of all reported cases of tubal cancer are associated with tubo-ovarian cysts, but careful observation indicates that the disease was primary to the tube and had been projected into the ovarian portion.

In seeking a cause for such involvement it is found in the irritation cells which result from tubal inflammation. In all the cases, carefully observed, the malignant disease has been preceded by long-continued tubal inflammation. Inflammatory conditions of the tube are so frequent that abundant opportunity exists for development.

Primary carcinoma of the Fallopian tube is regarded as a rare affection, and it is rare, when compared with the frequency of carcinoma in the uterus. The investigations of Orthmann, Boxer and others, have demonstrated its occurrence more frequently than supposed. While sarcoma and chorio-epithelioma have been found, carcinoma is much more frequent.

Boxer, in his contributions to the knowledge of tubal carcinoma, has analyzed 100 cases.

In its early stages the disease presents no symptoms which are likely to awaken the fears of the physician. Indeed, the gravity of the condition may be overlooked when the patient is subjected to operative procedure, unless the specimens removed are as a routine procedure subjected to microscopic investigation.

* Read in the Section on Obstetrics and Gynecology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

The most frequent symptom is menorrhagia, and a watery discharge is not infrequent. Pain as a consequence is rare. It is true the patient may complain of an uncomfortable sensation in the affected side of the pelvis.

The symptoms enumerated are common to a number of conditions within the pelvis, and take place in women who have had prolonged or repeated inflammatory attacks. The appearance of such symptoms in women who have pelvic disorder, and especially a thin, watery discharge, should be an indication for early operative interference.

The neoplasm, even when exposed, does not always present an appearance which should warn the operator of its gravity. While the largest percentage of reported cases occur between the ages of 45 and 50, the proportion is not sufficiently great to be of any diagnostic importance. It has been found in women who had passed the sixtieth year, and as early as the twenty-seventh year.

The occurrence of menorrhagia and watery discharge in women who have been victims of pelvic inflammation, when found associated with enlargement of the tubal structure should be regarded as danger-signals of sufficient importance to demand investigation through an operative procedure.

Neoplastic rather than inflammatory involvement indicates radical removal. When both tubes and ovaries are involved in neoplastic change, or the tubes only, the operative procedure should include the removal of uterus and ovaries as well as the tubes.

The diagnosis of malignant neoplasm cannot be made from the macroscopic appearance only. No case should be accepted as malignant when such diagnosis is not confirmed by the microscopic findings.

A very interesting case illustrating the importance of the position I have just stated was sent by me to my private service at the Jefferson Hospital, Sept. 9, 1910.

*History.*—The patient was aged 34 years, married twice, but never pregnant. The only constitutional condition incident to the family was tuberculosis, although none of the immediate family had died of it. The patient's husband informed me that his wife's first husband had died of cancer. Puberty was established at the age of 14. Periods were regular, profuse, painless, and lasted four to five days. She had been treated for pulmonary tuberculosis during the last two years, but had apparently recovered. Five months before coming under my observation she began to experience pain in the pelvis for four or five days preceding menstruation. The menstrual periods occurred every three weeks, lasting three to four days, and were very profuse. She had also noticed during this time a whitish discharge.

*Examination.*—This disclosed a retroversion of the uterus, and behind it to the right was a mass the size of an English walnut, which was quite movable. Diagnosis was retroversion with endometritis and a prolapsed right ovary.

*Operations.*—The patient was subjected to operation on September 10. The uterus was dilated and curetted, and the abdomen opened by the Pfannenstiel incision. The mass on the rignt side was found to be a neoplasm of the end of the tube, which was not adherent but freely movable. It was removed. The left tube was adherent and considerably thickened in its central portion. I contented myself with separation of the adhesions, and proceeded to shorten the round ligaments by carrying a loop of each between the layers of the broad ligaments and through the aponeurosis. The appendix was removed, although it presented nothing of an inflammatory character. The neoplasm, when cut through, gave the appearance of a fibroid which was undergoing fatty change. Microscopic examination disclosed the growth to be cylinder-cell carcinoma.

This report reached me on September 23, and the following day I removed the uterus, the remaining tube, and both ovaries. I was impelled to do this by the fact that at the previous operation I had found the left tube considerably thickened in its central portion.

*Postoperative History.*—With the exception of a slight phlebitis of the left leg, which developed on the fifth day after the second operation, the convalescence was very satisfactory. The patient was discharged in good condition Oct. 22, 1910. A week later some induration occurred at the lower angle of the wound, and a small quantity of sero-purulent fluid was discharged. A sinus discharging very slightly persisted for some months before it finally healed. It was difficult to account for this, as no silk was employed, either as ligatures or buried sutures. At the end of eight months the patient had gained 50 pounds, and seemed in the best of health. The uterus removed, aside from a small interstitial fibroid, was in good condition. The left tube the pathologist reported to be a tuberculoma.

This patient, but 34 years of age, presented the anomalous condition of carcinoma in one tube, tuberculosis of the other, and a myoma in the uterus. Her future cannot but be interesting.

## CONCLUSIONS

The study of the cases which have been reported by a number of observers would seem to justify the following conclusions:

1. Menorrhagia and watery discharge occurring in women giving a history of previous tubal inflammation should be regarded as danger-signals demanding careful investigation.

2. The association with such symptoms of tubal masses should be considered as requiring their removal, and where both tubes are involved the removal of the uterus through an abdominal incision.

3. All neoplastic masses of the tube should be subjected to microscopical investigation, for only thus can the diagnosis as to malignancy or non-malignancy be accurately determined.

1426 Spruce Street.

**Scientific Investigation vs. Theorizing and Speculation.**—The utter futility of the speculative method as a means of attaining effective knowledge is completely demonstrated by the stagnation and inefficiency of medicine under its influence for thousands of years. The only sure and effective way of gaining knowledge is the empirical method, by patient observation and investigation, the tardy adoption of which was the sole means by which internal medicine has been revolutionized and vivified. The keynote of the true method was struck by John Hunter in his advice to Jenner when the latter was beginning to ponder on the subject of vaccination, "Do not think, investigate." The whole history of medicine is an imposing demonstration of the futility of theorizing and the utility of scientific investigation.—Nichols in *Popular Science Monthly.*

# A MILK-BORNE EPIDEMIC OF TYPHOID FEVER

## AND THE DEMONSTRATED VALUE OF THE WIDAL REACTION IN DETECTING A TYPHOID CARRIER

EDWARD B. BIGELOW, M.D.
Assistant Bacteriologist, Board of Health
WORCESTER, MASS.

This epidemic of typhoid fever, which occurred among the customers of one milk distributor, is reported, that once more the probable danger to the community of a carrier of infection, engaged in the production of a food, may be emphasized, and the value of the agglutination reaction of Widal, as a means for locating such a carrier, be more fully appreciated. By reports of such epidemics the public will be aroused to the dangerous possibilities of these carriers. With this realization, the cooperation of whole communities, which is lacking at present, will be enlisted, the selfish personal motives and prejudices of ignorance, which attempt to block the efforts of the health service, will be overcome and the culmination will be a general demand that methods be devised and means be generously provided that such carriers may be sought out in advance, and such epidemics thus anticipated.

In the last twenty-five years, an average of 106 cases of typhoid fever has been reported yearly to the Board of Health of Worcester, a city with a population of 145,000 at present. This is, roughly, an average of one case a thousand of population a year for this period. In fact, however, the city has more than doubled in population in these twenty-five years, while the aggregate number of cases of typhoid fever is actually less in the second half of this period than in the first, increasing this ratio markedly. In the year 1910, the records of the health board show 295 reported cases, more than one case to each five hundred of population. The source of infection in 204 of these cases can be traced to one milk distributor's route. Through misunderstandings between responsible parties because of a change in physicians or transfer to the hospitals, nine additional cases were discovered after the epidemic was over, no report of which had been made to the Board of Health, and this number rightfully should be added to these 204 cases. Thus, in this epidemic at least 213 cases with ten deaths may be certainly attributed to one milk route. If the source of infection in several other cases could be surely traced, it is probable that several more of the 295 reported cases would be enumerated in this epidemic. Of these 213 cases, more than 180, after careful study, may be classed as primary, and it may be said that their infection was incurred at practically the same time. The remainder for the larger part were cases developing in families secondarily to one of the primary cases. Two were nurses employed in the hospitals in the care of primary cases, and a few are to be attributed probably to two cases among the employees of the distributor, who will be mentioned later.

From Jan. 1 to Aug. 11, 1910, only eighteen cases of typhoid fever had been reported to the Board of Health. During that day (August 11) seven more cases were reported. Six of these were on one milk distributor's route. An investigation of the premises of this distributor was made the following morning. Two of his employees complained that for the past two or three days they had had head and back aches, loss of appetite, felt weak and tired, but had continued about their work of distributing milk, washing bottles and other utensils used in the distribution of the milk. On physical examination, both had rose spots and temperatures, the higher

only 100.5°. Blood examination showed positive Widal agglutination reactions in both. They were at once removed to the hospital. Specimens of blood and examination of all other persons on the premises were negative in results. These two cases of typhoid fever were not the source of the infection of the six cases reported on the day previously, as their symptoms were synchronous or even later in onset. It was concluded, however, that their infection was incurred from the same source. Therefore, evidently a prior source for the common origin of the infection had of necessity to be sought.

This distributing milk man secured his supply from a milk car and four dairies within a few miles of the city. From the milk car several other distributors also obtained their supply. No cases had developed on their routes. This fact seemed temporarily to rule out the car and its supply as the source of infection. That afternoon the four dairies were investigated. On ordinary inspection there was nothing suspicious about them. No person living on any of these farms, so far as could be learned, was or had been recently sick, with the exception of one woman, who, it was definitely proved before the day was over, did not have typhoid fever. That evening the specimens of blood obtained from every person connected with these dairies—men, women and children—were examined by the agglutination test for typhoid. Of these twenty-five or more specimens one gave a positive Widal test.

This man of the positive Widal was visited again the next day, and his previous history more carefully taken. He had been producing milk for thirty years. He said that he had had typhoid fever twenty-six years ago. For years he had not been sick enough to be confined to the bed. Two weeks before, however, he recalled that for a few days he had had a slight attack of diarrhea with some headache, accompanied by a small amount of bright blood in the bowel movements. He had not given this any especial attention, because he had been subject for years to such attacks, together with bleeding from hemorrhoids. He daily assisted his hired man with the milking and handled the utensils. He boarded in a family of nine, none of whom had had typhoid recently. Their Widals were all negative.

Subsequently (August 19-26), specimens of urine and feces were obtained from this man on four different occasions over a period of eight days. These were examined after the method described by the Overlanders, Graham and Dailey,[1] oxbile, malachite green and Endo's fuchsin agar media being used. The stools were negative as to typhoid. From each of the four specimens of urine, one or more actively motile bacilli was isolated. These bacilli did not stain by Gram's method, did not produce gas in dextrose agar, nor curdle milk, but did produce, however, a slight initial acidity in litmus milk followed by a return to the original reaction the same as did the control. There was no production of indol in peptone solution and no liquefaction of gelatin in seven days. These organisms were agglutinated in a few minutes by a dilution of 1-200 of blood-serum obtained from three different known typhoid patients. At this time, I was undergoing a course of inoculations with typhoid vaccines; my blood-serum also completely agglutinated them in the same dilution in fifteen minutes.

More than two months later (October 31-November 4), this man's blood and urine were again examined. The blood in a dilution of 1-200 gave a positive agglutination reaction with typhoid organisms in less than one-half hour. The three specimens of urine collected on alternate days and plated on Endo gave an abundant growth of only one type of colony. More than seventy of these colonies having been picked off, it was found that each one reacted similarly to the tests previously enumerated. In addition, at Professor M. J. Rosenau's suggestion, a rabbit was repeatedly inoculated during a three-week period with a vaccine made from one of these organisms. The serum of this rabbit at the end of that time gave a macroscopic agglutination reaction when tried out in series against cultures of the laboratory typhoid organism in a dilution as high as 1-1100. The serum of a second rabbit, employed as control and similarly treated with vaccine from the stock laboratory typhoid organism, agglutinated one of these organisms isolated from the urine in a dilution of 1-1350. This was as high a dilution as that in which the stock laboratory typhoid organism itself in the control series was agglutinated by the serum of this second rabbit.

The plates of this last examination were in marked contrast, presenting an entirely different condition of affairs from that which was found when, this same technic having been employed the preceding year, an examination was made of the urine and feces of twelve convalescent typhoid fever patients from the wards of the Worcester City Hospital, the bacteriologic work of both years having been performed in the laboratory of that institution. These twelve patients had been free from fever for from ten days to two weeks or more when examined. A typhoid organism was recovered from three, a positive result of 25 per cent. for the twelve cases. However, out of more than five hundred organisms isolated from these twelve cases, only three proved to be typhoid organisms — that is, only one typhoid organism was isolated in each of the three cases which were positive, while in this carrier case every one of the numerous colonies on the plates apparently was a typhoid colony.

The agglutination reaction seems of much value in tracing the source of milk-borne epidemics of typhoid fever, to judge not only from the experience just cited, where it was most instrumental in bringing this case of a carrier to light, but also from that of the preceding summer in two epidemics of fortunately a markedly smaller number of cases. The probable proof of the source of these two epidemics was not as certainly established by actual attempted isolation of the organism as in this epidemic just reported. The cooperation of the suspected individuals was lacking in submitting to further tests than a Widal, for their hostility was aroused because of the fear that their private interests would be jeopardized.

In the first of these epidemics eight cases occurred on one milk route. On the dairy farm suspected as the source was a case later diagnosed as typhoid fever, synchronous in symptoms with these eight cases, and therefore not the source of their infection. The people living on the farm were questioned, and it was discovered that one young man who had never had any severe illness in his life, had had, some two or three weeks previously, an attack of so-called "grippe" of about two weeks' duration, during which time he had felt unable to attend to his business. For two of those days he had had an attack which he called "cholera morbus." His blood gave a positive Widal reaction.

To the second of these epidemics at least fourteen cases of typhoid fever on one milk distributor's route can be attributed. In the search for a source of infec-

1. Overlander, C. L. and J. E., Graham and Dailey: Boston Med. and Surg. Jour., Jan. 14, 1909, clx, No. 2, p. 38.

tion more than fifty Widals were performed on specimens of blood obtained from all the persons living on the different dairy farms supplying this distributor. Only one of these Widals was positive. The man from whom this specimen was obtained gave no history of any recent illness. The evidence that he might be the probable source was strengthened by this fact: the milk from this one of the several dairies was the milk bottled for the more particular customers, and on further analysis of the cases it was found that it was among those consuming this bottled milk that the fourteen cases occurred.

It has been remarked that the light cases of typhoid fever, unrecognized as such, and the carriers of the specific organism constitute the most formidable source of infection in a community possessing a pure water-supply. Each epidemic leaves its residue of chronic carriers, that are a threat of future epidemics. These carriers should be sought out and prohibited from engaging in such an occupation as cooking, baking, dairy work, etc., which may from the articles handled and consumed without further cooking endanger the lives of others. Milk, from its nature, is an especially fine culture medium; if contaminated with typhoid bacilli, particularly in the warm summer months, it is a most "effective" intermediary agent from the carrier to the consumer.

The recommendation of the committee of the American Public Health Association on typhoid fever that physicians should be impressed with the necessity of reporting this disease promptly is an excellent one. For, "until the physician, who is really the scout of the public health service, reports the location of the enemy, all our paraphernalia with all its elaborate organization is at a standstill."[2] The truth of this statement is shown by the epidemic reported in this paper, since the Board of Health had no inkling that such an epidemic was about to burst on the community until physicians reported actual cases, when the two employees as secondary sources of further infection were promptly recognized and removed. But these light cases, for which physicians are not called in, and carriers, because they are unrecognized as such, are the real danger of initiating other epidemics.

Typhoid fever has been called a preventable disease, and to consider it as such is certainly the goal which the public health service must strive to attain. That man constantly harbors the specific organism of typhoid fever is generally recognized at present. Precautions are taken to protect the public from typical cases. If the chronic carriers of this disease could be known, and the food and water-supplies, as intermediate bearers, be protected from their contamination, typhoid fever could soon be stamped out. The disease is preventable only by working along this line. Therefore, the new and serious problem that confronts the health service at present is, How is this knowledge of a carrier, which is of such recent recognition, to be gained, before it is bought at the extravagant price of an epidemic? A method of defense for this new problem, that is in the least satisfactory, has not as yet been advised.

The various methods advocated for the discovery of carriers, as general examination of excreta, or even only the examination of the excreta of those persons with a history of a previous typhoid infection, are propositions too large to be practicable. The second suggestion makes no allowance for the fact that in many cases of typhoid carriers there is a lack of a previous history of typhoid fever, and again that many carriers excrete the bacilli only intermittently.

From the experience of the last two years as set forth in this paper, the suggestion is made that specimens of blood for Widals be taken generally from persons living on dairy farms or handling foods that are consumed without further cooking, and then that the excreta of those only that give a positive agglutination reaction be examined. The Widal reaction in most cases of typhoid fever rapidly disappears after defervescence. The presence of post-typhoid suppuration somewhat increases its persistence.[3] Most carriers possess it. Therefore, if a Widal reaction persists, that person if employed as mentioned above should be looked on with suspicion until proved free from typhoid organisms by repeated examinations of excreta.

This procedure also is an immense proposition, when, as is the case in the city of Worcester with a population of 145,000 for an example, milk is supplied from more than 600 dairies and 900 stores and distributors. These statistics take no account of bakers, cooks and other persons who come in intimate contact with other kinds of food. This simple procedure of a Widal reaction, however, should certainly be carried out on the blood of all persons handling, or living on farms producing, milk which is put on the market as certified.

61 Pearl Street.

2. Am. Jour. Pub. Hyg., February, 1910, xx, No. 1 (New Series vi, No. 1), p. 50

3. Louisson and French. Guy's Hospital Reports, 1907, lxi, p. 227.

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# THE TRYPTOPHAN TEST FOR CANCER OF THE STOMACH WITH SPECIAL REFERENCE TO PEPTIDOLYTIC ENZYME IN THE SALIVA*

J. W. WEINSTEIN, M.D.
NEW YORK

## INTRODUCTION

The attention of the medical profession has recently been drawn to new ways of diagnosing cancer of the stomach by means of tests for the simplest products of protein digestion. Emerson,[1] who was among the first investigators to approach this field, found that "cancer tissue contains a ferment which, in the thermostat as well as in the stomach, is able to digest proteins beyond the peptone ('albumose') stage." He also observed that "this ferment is active in the presence of *free* hydrochloric acid." Emerson's discovery, coupled with the well-known fact that pepsin does not, in the stomach, conduct the cleavage of proteins beyond the stage of peptones, offered a method of determining whether or not the stomach has been invaded by a cancerous growth. A test for cancerous enzyme, if based on Emerson's findings, could not be applied, however, with the ease and directness which is desirable in clinical work.

## THE GLYCYLTRYPTOPHAN TEST[2]

About two years ago Neubauer and Fischer[3] published a new test for cancer of the stomach, which was based on

* From the laboratory of biological chemistry of Columbia University, at the College of Physicians and Surgeons, New York, and under the auspices of the George Crocker Special Research Fund.

1. Emerson: Deutsch. Arch. f. klin. Med., 1901-02, lxxii, 415.

2. In this paper the phrase "glycyltryptophan test" is invariably employed to indicate the Neubauer and Fischer process, which includes the use of glycyltryptophan. The term "tryptophan test" will be used to designate the author's method, which does not involve the use of glycyltryptophan. See Weinstein, J. W.: THE JOURNAL A. M. A., Sept. 24, 1910, p. 1085.

3. Neubauer and Fischer: Deutsch. Arch. f. klin. Med., 1909, xcvii, 499.

this same principle, but was applied specifically to the detection of an enzyme having the power of digesting a simple peptid. The substrate selected for this test was glycyltryptophan, a synthetic dipeptid containing the molecular radicals of glycin and tryptophan. Glycyltryptophan is readily hydrolyzed into these two amino-acids. Neubauer and Fischer selected glycyltryptophan as the peptid substrate for their test because tryptophan, which can readily be produced from it by enzymolysis, is the amino-acid that may be detected in the easiest and most direct manner.

In the test, as recommended by Neubauer and Fischer, glycyltryptophan is added to a sample of the stomach contents in question and the mixture is incubated for twenty-four hours. The presence or absence of peptidolytic enzyme is then ascertained by determining with the aid of bromin water, whether or not tryptophan has been produced. A positive result which, according to Neubauer and Fischer, could not occur through the action of anything in normal gastric juice or contents, indicates the presence of a peptidolytic enzyme and implies the occurrence of carcinoma of the stomach, whereas, according to the same authors, a negative result indicates the non-occurrence of carcinoma. Neubauer and Fischer supported their conclusions as to the significance of this test with a series of convincing clinical observations. Naturally, this new test for cancer of the stomach promptly received a great deal of attention and interest.

### THE TRYPTOPHAN TEST

I recently published[2] the results of some experiments which showed that the use of glycyltryptophan is superfluous for the detection of tryptophan-producing enzyme in gastric contents. A gastric cancer secretes enzyme which is capable of hydrating proteins into tryptophan and other amino-acids. Gastric contents always contain proteoses and peptones that are readily convertible by cancer enzyme into their corresponding simpler peptids and amino-acids, including tryptophan.[4] Consequently, it is unnecessary to add either a specific protein, or a simple peptid, or glycyltryptophan, as a tryptophan-yielding substrate for the easy detection of cancer protease in stomach contents.[4] It was shown by me that plain stomach contents served more satisfactorily for this purpose than stomach contents mixed with glycyltryptophan.

Previous observers, among them Erdman and Winternitz,[5] Glaesner,[6] and Volhard,[7] employed stomach contents directly for a similar purpose, but as incubation was not a part of the process in any of their methods, their observations as well as their findings, have little practical bearing on the method which was recommended in my original paper.

4. It is not very likely that stomach contents ever contain mixtures of proteins which would wholly fail to yield tryptophan among the products of complete proteolysis. Gastric mucus yields tryptophan under such conditions. Casein, egg albumin, glindin and practically all other ordinary food proteins yield tryptophan in comparatively large proportions. It is probable that the proportion of tryptophan which is produced from the proteins in stomach contents, under favorable conditions for the test, is sufficient for detection in all cases except those characterized by practical absence of peptidolytic enzyme. But in such instances glycyltryptophan would also fail to yield detectable proportions of tryptophan. Whether the tryptophan that arises from proteins in stomach contents (in the tryptophan test) is ever decomposed, and sufficiently reduced in quantity (through the continued action of the enzyme), to yield a negative result with bromin water cannot be decided at present. Thus far, however, all observations indicate that no uncertainty is introduced into the test in this way.

5. Erdman and Winternitz: München. med. Wchnschr., 1903, I, 982.

6. Glaesner: Berl. klin. Wchnschr., 1903, xl, 590.

7. Volhard: München. med. Wchnschr., 1903, I, 2129.

### WARFIELD'S STUDY OF THE ACTION OF SALIVA ON GLYCYLTRYPTOPHAN

There has been wide difference of opinion regarding the value of the glycyltryptophan test for gastric carcinoma. A few have commended it highly, but a large majority have pronounced it valueless. The main objection which has been raised against the test is that glycyltryptophan yields tryptophan in a large number of cases in which no cancer exists, as shown at autopsy and by operation. It has been asserted that most achylia gastrica cases, whether due to carcinoma or not, give a positive reaction with glycyltryptophan.

Warfield[8] has lately made observations which help us to understand the current differences of opinion regarding the value of the glycyltryptophan test.[9] Warfield has found that the saliva of some people, when not acid (to litmus) to begin with, is capable of decomposing glycyltryptophan into glycin and tryptophan. He concluded that *swallowed alkaline saliva*, when mixed with neutral or faintly acid gastric liquid, imparts to the latter the power of producing tryptophan from glycyltryptophan, thus rendering "the *glycyltryptophan test* of no value in the diagnosis of cancer of the stomach." Warfield has shown that the peptidolytic enzyme in saliva is destroyed by heat.[10]

### THE AUTHOR'S CONFIRMATION OF WARFIELD'S RESULTS

I have verified Warfield's findings. Every specimen of saliva, except one, in a total of eight was found to exert marked peptidolytic power on glycyltryptophan within twenty-four hours. The experiments in this connection were performed with glycyltryptophan and saliva directly, as a simple mixture, *and also after their mixture with stomach contents, which had either been neutralized or which contained a slight proportion of acid.* Neutralization in these cases was effected with one of the following alkalies: calcined magnesia, sodium bicarbonate and sodium hydroxid (1 per cent. solution).

No attempt was made to ascertain the limit of acidity within which saliva is able to induce the production of tryptophan from glycyltryptophan. Warfield states that acidity greater than that of a 0.05 per cent. hydrochloric acid solution prevents such action.

### THE SPECIAL SIGNIFICANCE OF WARFIELD'S FINDINGS

The important facts which have been disclosed by Warfield explain in part the past difficulties with the glycyltryptophan test. That they render its positive responses particularly unreliable in cancer diagnosis is obvious, for such results may be due to swallowed saliva. On the other hand, that Warfield's findings do not disqualify my tryptophan test for cancer of the stomach is equally clear, since the salivary protease does not produce tryptophan from the proteins in non-cancerous gastric contents.

All investigators of the subject agree on the proposition that cancer secretes enzyme which is capable of converting protein into amino-acids. The tryptophan test has all the advantages and none of the disadvantages of the glycyltryptophan test. Warfield's peptidolytic salivary enzyme is devoid of effect on the tryptophan test. I have repeatedly added saliva to normal stomach

8. Warfield: Bull. Johns Hopkins Hosp., 1911, xxii, 150.

9. In referring to "the stages in the complete digestion of coagulable proteins" Warfield states that metaproteins are "commonly called albumoses." It is evident that in this case *albumoses* is a misprint for "albuminates."

10. Dr. Giles, although suggesting the probability of ereptic and tryptic excretion by the salivary glands, thinks it possible also that the tryptophan-producing enzyme in mixed saliva is derived in part from bacteria in the mouth, especially from cavities in carious teeth. He has planned to investigate these possibilities.

contents of different degrees of acidity, but have never been able to detect tryptophan, even after prolonged incubation of the mixtures. In one special instance a specimen of stomach contents that contained no *free* hydrochloric acid, and which had been carefully neutralized with sodium hydroxid, (1 per cent. solution), *was mixed with saliva and kept in a thermostat for fourteen days.* Not a trace of tryptophan could be detected in the mixture at any time during the period. A few protocols, in this and other connections, are appended:

Mrs. S. N., suffering from chronic gastritis, has been coming to my service at the Vanderbilt Clinic for the past nine years to get hydrochloric acid, which does her good. Examination of stomach contents shows: Free hydrochloric acid, none; combined acid, none; total acidity, 4; reaction to litmus, faintly acid.

GLYCYLTRYPTOPHAN TESTS (I-III)

I. Stomach contents, 20 c.c.
Saliva, 10 c.c.
Glycyltryptophan, 1 c.c.[11]
=Marked tryptophan reaction in twenty-four hours.

II. Stomach contents, 20 c.c.
Saliva (previously *boiled*), 10 c.c.
Glycyltroptophan, 1 c.c.
=Marked tryptophan reaction within twenty-four hours.[12]

III. Stomach contents, 20 c.c.
Water, 10 c.c.
Glycyltroptophan, 1 c.c.
=Tryptophan reaction; not so marked, however, as before, in twenty-four hours.[12]

TRYPTOPHAN TEST (IV)

IV. Stomach contents (neutralized with NaOH), 28 c.c.
Saliva, 20 c.c.
Glycyltryptophan, *None.*
Toluol, a few drops.
=No tryptophan reaction.[13]

The effect of saliva on Witte peptone has been tried in experiments of a similar nature—such as are outlined below:

TRYPTOPHAN TESTS (A-B)

A. Witte peptone, 2 gm.
Saliva (Jacob's), 10 c.c.
Water, 20 c.c.
Incubation, 7 days (with toluol).
=No tryptophan reaction.

B. Witte peptone, 2 gm.
Saliva (Kraus's), 10 c.c.
Water, 20 c.c.
Incubation, 7 days (with toluol).
=No tryptophan reaction.

## THE AUTHOR'S FURTHER EXPERIENCE WITH THE TRYPTOPHAN TEST

I have been employing the tryptophan test for over a year and have found it a valuable sign in the diagnosis of cancer of the stomach. The main objection to the Neubauer and Fischer test is the frequent occurrence of positive responses in non-carcinomatous contents. This is not the case with the tryptophan test. On the contrary, in the case of the tryptophan test, *negative* responses have occurred in some specimens of stomach contents from true cancerous cases. By means of the tryptophan test I was able recently to distinguish all the malignant from the benign states in a series of pyloric obstruction cases prior to operation. Everybody knows the unusual difficulties that beset the endeavor to make a differential diagnosis of malignant from benign obstruction of the pylorus, since all the clinical features are the same in both conditions.

I am confident that the tryptophan test outranks every other available laboratory means for the diagnosis of cancer of the stomach. Further investigation is necessary, however, before it can be said that one or two positive tryptophan findings in stomach contents absolutely prove the existence of carcinoma. This degree of uncertainty is much less, however, than that connected with any other "sign of cancer." Among the "other signs" are absence of free hydrochloric acid from stomach contents, presence of lactic acid in stomach contents, occurrence of occult blood in stomach contents or feces, stasis of food, and the results of such newer methods as the Solomon, meiostagmin and hemolytic tests. Free hydrochloric acid is absent from stomach contents not only in gastric cancer, but also in chronic gastritis, pernicious anemia, exophthalmic goiter and achylia gastrica. On the other hand cancer of the stomach, chiefly of the pyloric region, may be accompanied by normal and even hyperacid states of the contents. Lactic acid, an important sign, frequently fails to occur in the contents of the stomach in cancerous cases, and it is occasionally present in undoubted cases of chronic gastritis. In general, lactic acid is prone to occur when free hydrochloric acid is absent and especially, also, when the motor powers of the stomach are impaired. Boas-Oppler bacilli are an excellent diagnostic feature of carcinoma ventriculi, but only when present in large numbers. Unfortunately they appear only when the invasion of the stomach by the carcinoma is extensive. They are never present unless free hydrochloric acid is absent and, in general, are not of very common occurrence. Occult blood in stomach contents and in feces occurs in ulcer of the gastro-intestinal tract, cirrhosis of the liver, and also in cardiac and renal cases that are attended by congestion of the viscera. The Solomon, meiostagmin and hemolytic tests are positive in conditions other than carcinoma.

I have made hundreds of applications of the tryptophan test to stomach contents. I have never obtained a positive response in any *undoubted* non-cancerous case, except such as resulted from gastro-enterostomy, in which the resultant artificial conditions favored the flow of intestinal contents into the stomach and thus caused the hydrolysis of the proteins into amino-acids by intestinal protease.

Whether the occurrence of tryptophan in the gastric contents affords an early sign of cancer, I cannot say. Thus far I have not diagnosed a case in its early stages by means of the tryptophan test. I have had several cases, however, in which the first sign of cancer of the stomach was a positive response in the tryptophan test—all other signs failing to give a clear indication. I have lately had an elderly patient (Mrs. O. R.), who suffered from digestive disturbances accompanied by low gastric acidity. Her nutrition and general condition were such as to preclude the diagnosis of carcinoma, and I thought I was dealing with a case of chronic gastritis. The tryptophan reaction, however, was repeatedly positive. Four to five weeks later a tumor appeared in the region of the stomach, which grew very rapidly. The case was then diagnosed by every one who saw the

11. This quantity of glycyltryptophan solution is the volume provided by Kalle & Co. (Biebrich am Rhein) for a single test in accord with the directions of Neubauer and Fischer. The volume is usually a little greater, though it is seldom more than 1.5 c.c. The exact concentration of the solution is unknown to me.

12. This positive result was due undoubtedly to the enzyme which had been introduced into the gastric contents in the saliva *swallowed* by the patient.

13. This mixture was kept in a thermostat for seven days, but no trace of tryptophan could be detected at any time during that period.

patient as an undoubted case of cancer of the stomach. Operation was proposed, but the patient disappeared from observation.

Another experience of mine related to an elderly man (N. F.) who presented himself to my service at the Vanderbilt Clinic with stomach trouble. I obtained several positive tryptophan tests and on the strength of these only, as the other features did not clearly indicate malignancy, I advised an operation. This was refused by the patient, who disappeared from observation. Three months later I traced him to Mount Sinai Hospital. There an exploratory laparatomy was performed and a lymphosarcoma of the middle of the stomach was found and resected.

### ANOMALOUS EXPERIENCES WITH THE TRYPTOPHAN TEST

In numerous applications of the tryptophan test I have had anomalous experiences with several cases. The stomach contents of one patient (Case 16 of my original paper), a man of 54 with a suspicious history of carcinoma, gave repeated tryptophan tests in the presence of free hydrochloric acid. The patient felt well afterwards for a couple of months, when I lost track of him for a time. Lately, however, I have had the opportunity of again examining him. He is now in good health and apparently free from cancer of the stomach.

Another anomalous case was that of a middle-aged woman, who had a typical pyloric obstruction, with marked peristaltic movements and gastrectasia. The tryptophan test was repeatedly positive. The patient refused an operation. Four months later she seemed to be somewhat improved, but still had all the stigmata of pyloric obstruction. At that time two tryptophan tests applied to different specimens of gastric contents were negative. This patient is now in the hands of a colleague who thinks that her pyloric obstruction is a benign one, because it shows no signs of further increase. We should not forget, however, that a scirrhous carcinoma is of slow growth and that, with a very small open passage through the pylorus, and lavage, the patient may hold her own for a long time.

Another case of interest in this connection was that of Mrs. L. S., aged 64, who presented a typical history of cancer of the stomach, such as sudden onset of illness of nine months' duration, loss of appetite, considerable loss of flesh and strength, vomiting, and vomiting of coffee grounds. Occult blood was found repeatedly in the stomach contents and feces. An exploratory laparotomy was performed by Dr. A. A. Berg, who failed to find any abdominal lesion. In this case repeated tryptophan tests were negative. Once, however, it was strongly positive, but in that instance the contents had been rendered very faintly alkaline with magnesium oxid, and the resultant proteolysis was undoubtedly due to intestinal protease. It was intended, in this procedure, to enhance, if possible, the action of the cancer enzyme through alkalization, an expedient which, as was found, may possibly lead to error.

Dr. Berg performed a pylorectomy on another patient, Mrs. S., whose history and findings pointed strongly to the diagnosis of cancer of the stomach. Several tryptophan tests were positive. The pathologic report was "inflammatory," and not malignant.

### DISADVANTAGES OF THE TRYPTOPHAN TEST

The tryptophan test is inconstant. Tryptophan may appear in the contents from one meal and fail to appear in the contents from the next. This implies inconstancy in the secretion of the carcinoma enzyme, but it does not indicate variability in the reactive tendencies of the reagent in the test. I saw in consultation about three months ago an old lady who had all the stigmata of cancer of the stomach (no palpable tumor, however), and I failed to get a positive tryptophan test in a specimen of stomach contents. Only one test was tried in this case. As a rule, however, several tests of different specimens of gastric contents yield a positive reaction in each case of cancer.

### SOURCES OF ERROR IN APPLYING THE TRYPTOPHAN TEST

There appears to be one important source of error in the tryptophan test, and that is regurgitated intestinal fluid. Boas[14] was the first to obtain duodenal contents from the stomach. He massaged the duodenum toward the stomach and obtained a variable quantity of bile-stained fluid through a stomach tube. Later Boldyreff,[15] at the instigation of Pawlow, introduced olive oil into the stomach through a tube and subsequently extracted the contents. Olive oil has the double effect of checking gastric secretion and stimulating pancreatic secretion. It also acts as a lubricant, and back flow of intestinal contents is facilitated. By such means, duodenal contents may be secured. This line of work was taken up by a good many investigators, such as Faubel,[16] Volhard,[17] Molnar,[18] Ohrl and Schittenhelm[19] and their experiences coincide in the fact that some duodenal secretion may be secured in this manner. The observations of Ohrl and Schittenhelm indicate that under ordinary conditions spontaneous regurgitation of intestinal contents into the stomach takes place. In considering, however, the degree to which the tryptophan test may be vitiated by erepsin or trypsin, or both, we must not forget that these enzymes are destroyed by the acid of gastric contents. Moreover, I have repeatedly kept non-cancerous stomach contents, devoid of free hydrochloric acid, in a thermostat at 40 C. for days and even weeks, without obtaining a positive response in the tryptophan test. It is obviously necessary, however, in every serious application of the tryptophan test, to prevent all possible regurgitation of duodenal contents. To prevent this occurrence the stomach contents should be withdrawn gently, and also without any straining on the part of the patient. For this purpose the aspiration method instead of the expression process should be employed. A tube with thin walls and a bore not more than 10 mm. in diameter (30 French) should be selected for the purpose. The patient should be instructed to breathe continuously during the extraction. The manipulation should be conducted by one who is skilled in the work and not by an untrained assistant. By disregarding these rules, by letting the patient press forcibly on the tube until he gets blue in the face, some intestinal regurgitation will probably result and may vitiate the test. Vomitus is not reliable for obvious reasons. If, in spite of all these precautions, one obtains a specimen of stomach contents with a greenish color, and which gives the chemical tests for bile, the specimen should be discarded and another one secured.

Various authors have stated from time to time that occult blood vitiates the glycyltryptophan test. They

14. Boas: Zentralbl. f. klin. Med., 1889, x, 97.
15. Boldyreff: Zentralbl. f. Physiol., 1904, xviii, 457; also, Arch. f. d. ges. Physiol., 1908, cxxi, 13.
16. Faubel: Hofmeister's Beitr. z. Chem. Phys. u. Path., 1907, x, 35.
17. Volhard: München. med. Wchnschr., 1907, liv, 403.
18. Molnar: Ztschr. f. klin. Med., 1909, lxvii, 188.
19. Ohrl and Schittenhelm: Zentralbl. f. ges. Phys. u. Path. d. Stoffwechs., 1910, v, 881.

might also presume that it vitiates the tryptophan test. In my original paper I discussed these improbabilities. I have not ignored the fact that blood contains proteases. I am certain, however, that blood, even when present (in the tryptophan test) in a quantity sufficient to impart a distinct red tinge to the contents, is not able to produce tryptophan in detectable proportion. I have repeatedly studied this matter, from various points of view, and have always obtained negative tests for tryptophan in contents to which moderate amounts of blood had been added—in one case even after incubation of the mixture for seven days. I have also obtained negative tryptophan results in such mixtures of glycyltryptophan and blood, even after incubation for the same length of time. Of course, it is likely that the addition of large quantities of blood would effect hydrolysis of associated protein, but in such cases the tryptophan test could not be carried out, for it would be impossible to discern the characteristic red color resulting from the addition of the bromin.

The presence of *free* hydrochloric acid does not necessarily interfere with the test. I have found tryptophan in several instances of carcinoma with high gastric acidities.

### TECHNIC OF THE TRYPTOPHAN TEST

*The Test Meal.*—The ordinary Ewald test breakfast is not suited to the test. This has been shown repeatedly. A simple and effective test meal is a glass of water, hot or cold and very sweet, with some white bread, or toast or biscuits. Milk may also be added. The contents are extracted in about one hour. A regular dinner with extraction after two to four hours, also serves the purpose. Any substance that is likely to impart color to the contents, such as strong tea, coffee, strawberries, tomatoes, etc., should be excluded from the test meal. After their extraction a portion of the contents should be *filtered* and tested directly for tryptophan. If the test is positive, no further treatment is necessary. If the direct test is negative, however, the contents, filtered or unfiltered and without the addition of toluol or other preservative, should be kept in a thermostat for from twenty-four to forty-eight hours, and then tested again for tryptophan. The addition of a preservative appears to be superfluous, for I have shown repeatedly that the bacteria which develop do not produce tryptophan in a detectable proportion.[20] The tryptophan test may often be obtained in positive cases without incubation, by merely keeping the contents at room temperature for from twenty-four to forty-eight hours. Incubation, however, is preferable.

*The Test for Tryptophan with Bromin Water.*—In completing the tryptophan test, *filtered* stomach contents should be employed. A volume equal to 6 or 7 c.c. is satisfactory for the purpose. This volume in a test-tube is treated with a few drops of a 3 per cent. acetic acid solution and then saturated aqueous solution of bromin is added, drop by drop, from a pipette. The appearance of a reddish-violet or rose-red color shows the presence of tryptophan. If, after the addition of about 4 drops of bromin water, the expected color does not appear, the mixture should be allowed to stand for about fifteen or twenty minutes, when the characteristic color may develop. If, by the end of that time, the rose color fails to show, then more bromin water should be slowly added, drop by drop, until the mixture becomes yellow or until a rose-red color is imparted. If a reddish color is produced, the mixture should be allowed to stand again, when the tinge may grow deeper. Considerable practice is required for the accurate performance of the test in the presence of very minute proportions of tryptophan, because a slight excess of bromin may make the characteristic color indistinguishable. Excess of bromin imparts a lemon-yellow color to the mixture. Whenever the reddish color merges into a yellow we know positively that there is an excess of bromin in the mixture. The opening at the tip of the pipette from which the bromin solution is dropped should be a very small one. The bromin water should invariably be added drop by drop, and the mixture should be well shaken after each addition.

Bromin itself should be handled with great care, for it is extremely irritating to the respiratory mucous membrane. Under no circumstance should plain liquid bromin be mixed with the gastric contents to be tested. An aqueous bromin solution may be kept saturated by retaining in it a slight excess of the heavy liquid bromin.

Acetic acid is added to the mixture to be tested, because the reaction appears at its best in an acid medium. Alkali, by combining with the bromin, prevents the reaction with tryptophan. Almost all stomach contents are acid and in testing them for tryptophan the addition of acetic acid may not be necessary. In mixtures of very low acidity, however, the addition of acetic acid is especially desirable.

I wish, in conclusion, to express my indebtedness to Prof. William J. Gies for the use of his laboratories and suggestions in my work.[21]

71 East Ninety-Sixth Street.

20. I cannot say that this would always be the case, for some bacteria and fungi that I have not thus far encountered may be able to produce detectable proportions of tryptophan under the conditions of the test

21. The following, together with references numbered 2, 3, 8 and 19, constitute a complete bibliography of the glycyltryptophan and tryptophan tests to the time of writing this paper.
Abderhalden: Ztschr. f. physiol. Chem., 1909, lxii, 136.
Kohlenberger: Deutsch. Arch. f. klin. Med., 1910, xcix, 148.
Lyle and Kober: New York Med. Jour., 1910, xci, 1151.
Kuttner and Pulvermacher: Berl. klin. Wchnschr., 1910, xlvii, 2057.
Ley: Berl. klin. Wchnschr., 1911, xlviii, 119.
Oppenheim: Deutsch. Arch. f. klin. Med., 1910-11, ci, 293.
Pechstein: Berl. klin. Wchnschr., 1911, xlviii, 375.
Hall and Williamson: Lancet, London, 1911, clxxxi, 731.
Neubauer and Fischer: München. med. Wchnschr., 1911, lviii, 674.
Ehrenberg: Berl. klin. Wchnschr., 1911, xlviii, 704.

## THE TREATMENT OF HEMOPTYSIS IN PULMONARY TUBERCULOSIS *

MAX ROTHSCHILD, M.D.
SAN FRANCISCO

Two months ago I read a paper on the treatment of hemoptysis in tuberculosis before the meeting of the Medical Society of the State of California, at Santa Barbara. When I returned from the meeting, I was notified on my arrival in San Francisco that a dozen of my patients were having hemorrhages. The peculiar feature of this fact was that they all started to bleed at about the same time, which can be explained only by changes in atmospheric pressure. A number of these patients bled for only one or two days, and showed no alarming symptoms, but two of them continued to bleed severely, and in spite of all the usually employed means and manipulations the hemorrhages did not stop.

I shall give in detail the history of one of these patients, because this one case will be sufficient to explain the soundness of the method I have used for the

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

last two years in treating severe and dangerous hemorrhages. All other cases are more or less alike, and their description would be only a repetition in slightly varied form.

*History.*—The patient in question is a young man of 18 years, from Stockholm. He went to Turban's sanatorium in Davos about two and one-half years ago, on account of tuberculosis of the left upper lobe. During his stay there the right lung also became involved, but after nineteen months' treatment he was discharged, as all the symptoms had subsided. He returned to Sweden, then came to California to spend the winter of 1910-11.

*Examination.*—The patient came to my office in February, 1911. Two weeks before he had caught cold and had had some sputum which was examined, and tubercle bacilli in abundance were found. The evening before he came to my office, he had had a hemorrhage. Examination showed increased resistance over the left upper lobe, with sharp scar breathing. In the back of the left lung, between scapula and vertebræ, there was pronounced crepitation during inhalation and exhalation over an area the size of a dollar. There was harsh bronchovesicular breathing over the right upper and middle lobe, with small and medium sized moist and dry râles. The spot in the right lung had again become active.

*Treatment and Course.*—The patient went to our sanatorium in Belmont, and during February, March and April he was under the usual treatment. The last examination (April 6) showed no change in the breathing over the left lung. The right lung had improved considerably. There were only a few râles in the second intercostal space. There was sharp breathing in the right upper lobe during inhalation and exhalation, and exhalation was prolonged. The patient had gained from 15 to 20 pounds, and was looking and feeling fine. His temperature was normal; the cough had diminished; there were no night sweats; and the sputum was about one-tenth the amount which he had had on entrance, but there were still from 6 to 8 tubercle bacilli to the field. He was allowed to get up for a little while every day and to take moderate exercise. In the night of April 21 he had a severe hemorrhage, and another the following morning. As he complained of pain in the right lung, my assistant strapped that side tightly. He believed that the hemorrhage came from the right lung, but could not examine the patient at the time on account of the danger of renewed hemorrhage. The patient was given gelatin, calcium chlorid, ice-bags, etc., but that night he had another hemorrhage. The temperature rose to 101.5-102. He was given very slight doses of opiates, just enough to keep the cough under control. We tried to examine him on the morning of April 23; there were medium and large râles over the right as well as over the left lung. It was impossible to find out definitely from which side the hemorrhages came, but we had the impression that it was from the right side. That night he had a hemorrhage, another the following morning, and again the next morning. We examined him again, and again were unable to tell with certainty the spot from which the hemorrhages came. As soon as the boy tried to breathe a little deeper, he would have a hemorrhage. We had an *x*-ray taken by Dr. Freytag, from which it was evident that the right lung was a good deal more involved than the left, and as this harmonized with our findings, and the hemorrhages recurred regularly every twelve or twenty-four hours, we decided to compress the right lung. On the morning of April 27 we produced an artificial pneumothorax on the right side. We let about 600 c.c. of nitrogen run in, and from that moment the hemorrhages stopped. At the second inflation, two days afterward, we found about 2 cm. negative pressure. We again let 600 c.c. of nitrogen run in, which produced about 2 cm. positive pressure. Since that time the patient has been treated in the usual way, the artificial pneumothorax has been kept up, and so far there has not been a particle of blood in the sputum.

This case is in my opinion a most interesting one and teaches us a great deal.

To summarize: A young man, tuberculous for two years, has acute hemorrhages which are not only very intense, but also obstinate. All the usual methods of treatment are without effect; the temperature is gradually going up to 102; the patient is not only frightened to death, but is becoming weaker daily; and the hemorrhages show no tendency to cease. The artificial pneumothorax stops the hemorrhages instantly; the temperature goes down; and the patient begins to improve. (Unfortunately, this patient died of miliary tuberculosis a few days ago, but that has no bearing on the phase of his sickness under discussion.) Besides this case, I have treated seventeen others during the last two years, all with just as severe and obstinately recurring hemorrhages.

It is needless to state that in cases in which there was blood in the sputum only occasionally, or in which there were decided hemorrhages without any serious aspect, or without a tendency to recur too frequently, I have confined myself to the usual old remedies or manipulations, which are too well known to necessitate an enumeration. Only when these different remedies seemed to have no effect, or when the hemoptyses had a serious aspect on account of their intensity, have I used the artificial pneumothorax. I have chosen only such cases, not because I thought that the operation might be harmful in lighter ones, but merely because I did not want to feel, in publishing these first cases, that our old remedies might have done the work just as well.

It is advisable to discuss here to some extent the indications and contra-indications for artificial pneumothorax.

Forlanini himself gives the following as the indications:

1. In uncomplicated cases of one-sided phthisis with slow or subacute course and with free pleura, without regard to the degree of the lesion.
2. In cases in which adhesions exist, if these adhesions can be removed by artificial pneumothorax.
3. In cases of double-sided phthisis which do not show an acute course, and in which the lesions in both sides are not far advanced.

Karewski,[1] in his paper discussing the newer methods of surgical treatment of tuberculosis of the lungs, speaks well of the artificial pneumothorax. He says, however, that it is indicated only when all physical and dietetic means have been exhausted, and that it is absolutely contra-indicated when the other lung is involved. The autopsies of patients who were treated with artificial pneumothorax, but who died in spite of its use, showed that the clinically observed improvements corresponded with the post-mortem findings. In the lung which was artificially compressed were found a large amount of interstitial tissue and indications of scar formation; only a very few fresh tubercles were found, and these contained a surprisingly large amount of dry, cheesy degeneration, showing *in toto* signs of a reparative process. He also found that in the clinical picture of properly selected cases, the weight of the patient increased and the general condition improved considerably; he noticed a decrease in the number of bacilli, and a disappearance of the elastic tissue in the sputum, which itself became less and often disappeared entirely.

I should like to divide the indications for the operation into different groups.

1. Those which might be called safe indications: Severe one-sided involvement, with a healthy other side, and no adhesions, or only fresh ones, on the diseased side.

1. Karewski: Ztschr. f. Tuberk., xiv, No. 6, 1909, p. 465-479.

2. Permissible indications: (A) Severe one-sided involvement, with fresh or not too old adhesions on the other side. (B) Severe involvement of one side; slight involvement of the other, not including more than one-third of the lung, and without cavity formation. Involvement of the upper lobe on the better side gives the more encouraging outlook. (C) Severe involvement of one side, with adhesions, and obstinate hemorrhages with or without adhesions.

3. Dubious indications: Severe involvement of one side and cavity formation in the lower lobe of the other lung.

4. Contra-indications: (A) Extensive involvement, with cavity formation in the better side. (B) Thick and firm adhesions all over the side on which the pneumothorax should be made. (C) Severe complications of other organs.

A tuberculous larynx can only be favorably affected by the pneumothorax, as less sputum will pass the larynx.

There are also many cases of diarrhea in tuberculosis, in which this complication is not a result of organic tuberculosis of the intestines, but only represents the attempt of the body to secrete the poisons. The diarrhea can disappear after this secretion of poisons has been removed by artificial pneumothorax.

One of the most important works which has been published on artificial pneumothorax is that of Brauer and Spengler.[2] It gives a report of 102 cases, each case described in detailed, and afterward shortly and exactly discussed.

These men have not confined themselves to the narrow indications given by Karewski or by Forlanini, and their results are surprisingly good. I mention this fact especially, as one might say that the cases of hemoptysis are few in which artificial pneumothorax should be used. This is not true. Naturally, the ideal cases are those in which only one side is affected, and the other side is entirely healthy, but we do not see many of these.

In the great majority of cases the other side is slightly affected, and this fact is no contra-indication. On the contrary, many writers on the subject agree that the slightly affected side shows an improvement while the badly diseased side is compressed. I want to mention again that I am not discussing the pros and cons of the artificial pneumothorax in the treatment of tuberculosis, but only in the treatment of one symptom, i. e., hemoptysis; and that I am especially discussing this method in cases of severe hemorrhages in which all usual remedies have failed. In such cases I should not hesitate to produce an artificial pneumothorax; but—and this is an important point—I should not keep the bleeding side compressed for any length of time if the other side showed a decided progress of the disease. After the first inflation the nitrogen becomes absorbed rather quickly; usually in twenty-four hours the pressure, which was positive or neutral just after the operation, is again negative. If the hemorrhages have stopped, and if the general condition of the patient is not good, I should not reinflate. In other words, one must be guided by clinical observation in each case; and if the physician has his eyes open, and notices every change in his patient, there is no real danger connected with this method.

350 Post Street.

2. Brauer and Spengler: Klinik der Tuberkulose, xix, 1911, p. 1-335.

## CLIMATE IN THE TREATMENT OF PULMONARY TUBERCULOSIS *

W. JARVIS BARLOW, A.B., M.D.
LOS ANGELES

It is to be expected that men who live in health resorts would make some special study of climatic influence on diseases, and through experience of many years reach some definite opinion of the effects due to climate. It is well known that the physicians of the southwest have decided views in favor of climatic treatment with their own special brand, and I make no apologies for being classed as one of them. Space does not permit, nor is it my intention to give explanations and descriptions of the factors, atmospheric conditions, and the principal types of climate, or descriptions of different health resorts; all of which may be read in recent publications under my signature. It would seem better to give the indications and contra-indications for climatic treatment of tuberculosis and to give the classes of cases suitable for this type of climate.

Climatic treatment must deal not alone with the factors or atmospheric conditions of climate, such as temperature, humidity, sunshine, pressure, etc., but also with others quite as important, the non-climatic features, i. e., temperament of the individual, financial resources, stage of the disease, individual characteristics, etc. With these considerations in view, the essential thing in selecting suitable climate is to individualize all cases. Since the search to find specific climate for tuberculosis is apparently at an end, we must remember always that the place which has suited one case may be entirely unfit for the next, and that each patient must necessarily be separately studied in connection with the non-climatic features of a place.

All fresh-air and open-air treatment is a part of the climatic treatment and is now being used in each part of the country, in every kind of climate, for all diseases, especially all chronic diseases, so that a change to meet the right conditions for open-air treatment in any climate is sufficient proof of the value of such treatment. No hospital ward to-day is complete without its open-air balcony or adjacent porch, and patients are being placed out of doors in every climate in all but the worst weather. With the proper use of this treatment, pneumonia has lost much of its terror and some eastern physicians using it say they have saved many lives that formerly would have seemed beyond help. It is Nature's way of bringing about benefit or a cure, and, fortunately, the use of it for the cure of tuberculosis has shown us how inexcusably it has been neglected in the treatment of other chronic diseases.

If we acknowledge then, that climatic treatment is a great factor in our care of the tuberculous, is it not reasonable to suppose that the place suited to the individual, where he can obtain the best climatic factors would give better results than his own home where the atmospheric conditions are not so favorable?

What then are the atmospheric conditions of greatest importance? They are:

1. Plenty of air.
2. Percentage of sunshine.
3. Amount of humidity.
4. Temperature with its variations.
5. Pressure of air.
6. Severity of winds, dust, etc.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

Certainly the pure air and abundance of sunshine must be accepted as a help for every case. With regard to humidity and temperature, whether the climate chosen should be dry or moist, cool or warm, it must depend on the non-climatic factors, or the individual considered. Certainly for the majority of cases that climate which is dry and cool is to be preferred. As to the pressure of air, also, whether the case should be in high, medium or low altitude, depends on other factors than those of climate alone. Careful consideration must be given to the individual, the age, temperament and the stage of the disease. Further, climatic change should not be made until the patient has been under treatment at home sufficiently long to have him understand the details of the open-air cure, the dietetics and hygienic management of tuberculous cases, and until the physician in charge has familiarized himself with the resort selected that the patient may obtain the right accommodations and the best medical care. It is absolute folly to send any patient who needs attention to a climatic resort unless the home physician has assured himself that the patient will have as good medical care as at home. Experience of several years in a health resort has taught me that many lives are sacrificed through this omission, and by rough and improper handling of sensitive, peculiar temperaments, which class of patients are too often set adrift. Unless climatic treatment can be properly carried out, it is far better to keep the patient at home under right management, because it is conceded by all that many tuberculous patients will recover in any climate under the sun.

For a general rule to be specialized with exceptions given later in the paper, I would state that patients with pulmonary tuberculosis developing between the ages of 17 and 40 should be sent to a high, dry altitude. When disease has begun after the age of 40 years, patients should be kept in lower altitudes, in climates more equable and relaxing; some patients show greater improvement near the coast where sunshine and equability are features. Children will do better always at or near the coast in either cold or warm climates.

### INDICATIONS AND CONTRA-INDICATIONS FOR HIGH-ALTITUDE TREATMENT

The great mass of tuberculous patients under the age of 40 years, early tuberculosis with or without fever and constitutional symptoms, including patients with hemoptyses, and those with beginning destruction, present indications for high-altitude treatment (3,000 to 7,000 feet). So also do cases with compensated cardiac disease and with no great degree of emphysema.

Contra-indications are presented by acute pneumonic cases with high fever, rapid pulse and respiration, advanced cases with extensive involvement or cavity formation of both lungs, with extensive adhesions and dyspnea, chronic fibroid cases which have a good deal of bronchitis and emphysema, young children and infants, and many patients of a neurasthenic type, or nervous temperament.

In selecting high altitude, limitation in this paper is made to those resorts in the United States with which I am familiar as it will be impossible in this short time to mention all the resorts that are available. Patients demanding high-altitude treatment for the whole year should be sent to the Rocky Mountain region, the chief resorts of which are to be found in Colorado, New Mexico and a few in Arizona. All of these resorts show similar characteristics, Colorado leading in accommodations, care and medical attention, New Mexico being somewhat superior in its climatic advantages. The winters are cold and stimulating, the summers cool and bracing. They have the natural advantages for the treatment of pulmonary tuberculosis; pure air, dryness, abundance of sunshine, altitude, a wide difference of temperature between day and night.

The chief resorts of Colorado are, of course, Denver (altitude 5,200 feet) and Colorado Springs (altitude 6,198 feet), with their outlying districts. No better places than these may be found for the treatment and care of pulmonary tuberculosis, and nowhere else are climatic features that will agree with so many patients. They may be compared favorably with the famous resorts of Switzerland. The chief objections to not a few patients are the sharp diurnal changes and the cold of winter. For such patients my plan has been to recommend the lower elevations of Arizona and California for the winter months and to have the patients return to Colorado for the other six or eight months. As before stated, each case must be separately studied that one may know what influence cold or warm temperature has on the individual. Higher elevations in Colorado, such as Manitou (altitude 6,300 feet), Glenwood Springs (altitude 5,200 feet), and Estes Park (altitude 7,000 feet) are changes that are made for the summer season.

The New Mexico resorts are always to be considered for high altitude treatment, remembering that the winters and summers there are both slightly warmer than in Colorado and for this reason may often be more suitable. The atmosphere is sufficiently dry to make the heat of summer at any of the resorts never uncomfortable or oppressive and the nights are always cool. When more accommodations and comforts are provided, the resorts of New Mexico will be second to none. Santa Fe (altitude 7,013 feet), Las Vegas (altitude 6,500 feet) and Albuquerque (altitude 5,200 feet) are the three resorts in the northern part of the state with a climate not unlike that of Denver. The cold is not quite so great nor the summer temperature so high, with the exception of Las Vegas. Of the three places, Santa Fe has the best summer climate. The principal resort in the southern part of the state is Silver City (altitude 6,000 feet), which has become well known for its climatic advantages and can be safely recommended for high-altitude treatment at any time of the year. The summers are never too hot nor the winters too cold and of all the southwest region it has no superior. Patients who have lost ground at other places have often made surprising gains in this region. Fort Bayard (altitude 6,200 feet) is not far from Silver City and has been chosen by the government as offering the best climatic conditions of our states.

Arizona is limited in its high altitude resorts, only one of which, Prescott (altitude 5,260 feet), can safely be recommended for pulmonary cases. It has all the advantages of the Rocky Mountain region except that the winters are milder and warmer, which may be an advantage. It is well protected from severe wind and dust storms. Flagstaff (altitude 7,000 feet) has perhaps the best all-year-round climate in Arizona, but no provision has yet been made for invalids, though it has every natural advantage.

Southern California has places of high altitude with natural and excellent climatic features in the valleys of the San Jacinto and the San Bernardino Mountains, but these places cannot be recommended, as there is no provision made for the treatment of patients with pulmonary cases. These mountain places, as well as those of the northern part of the state, are more or less well

equipped for summer tourists and those who no longer need medical attention.

For medium-altitude treatment (1,000 to 3,000 feet), there are many resorts throughout the east which are available and suitable for the whole year. There are the Adirondack Mountains of New York represented by its many lake resorts so well known that they need no exploitation here. Saranac Lake stands as no other one place for its great representation in the out-door treatment of pulmonary tuberculosis, and no man in the profession is more loved than the one who made this region famous. Besides the Adirondacks, the east has the Catskill Mountains, the White Mountains, resorts of New Hampshire, the Blue Ridge Mountain region of Pennsylvania, and the several resorts of Virginia. In the south, however, none stand so well to-day as Ashville (altitude 2,255 feet), which has gained an enviable reputation. There is no better place for all-year-round residence for those who need this altitude. The air is tonic and stimulating like that of higher elevations. In the west we have only two important places of medium altitude, Phoenix (altitude 1,087 feet) and Tucson (altitude 2,400 feet). I place all the resorts of Southern California in the low altitude group. Both Phoenix and Tucson are suitable only for the winter months, both having distinct advantages for dryness, amount of sunshine and the mildness of the winter climate. Tucson on account of its altitude and more stimulating climate has an advantage over Phoenix, and experience has taught me that Tucson will suit more cases than will Phoenix when climate alone is considered. For those who can exercise and ride about the country, Phoenix will be more agreeable.

Low-altitude resorts are to be found for different months of the year in almost every section of the United States. In the east are the places along the lake region, the Great Lakes, the Thousand Islands, Central Plateau of Massachusetts, the Berkshire Hills, northern New Jersey, etc. In the south are the resorts of North and South Carolina and Georgia including, of course, Aiken, Augusta and Thomasville, each having their advantages for the winter months and all more or less relaxing in type. In the west, we have San Antonio, Texas, (altitude 680 feet), which can be safely recommended for the winter months (December to April). Near the Pacific coast in California a great valley has recently been made comfortable and many find health under these dry, equable conditions. I refer to the Imperial Valley. Banning and Palm Springs, Cal., are similar resorts of a desert type cut off from the humidity and rain storms of the Pacific Coast.

The low-altitude types of Southern California are chiefly situated in the San Gabriel Valley which extends from Redlands (altitude 1,200 feet) to Pasadena (altitude 800 feet). Along this valley are growing towns and outlying districts which have been built up chiefly by health seekers: Redlands, San Bernardino, Riverside, Ontario, Pomona, Duarte, Monrovia, Sierra Madre, Altadena and Pasadena. The best winter climate of this group and the one offering the best accommodations for tuberculous cases is found at Redlands, Riverside, Monrovia and Sierra Madre. Redlands, Riverside and Ontario are too warm in summer for most invalids, but the other places reaching from Monrovia down through Pasadena and to the coast are suitable for all-year-round residence with some hot days in summer when the temperature reaches 100 F., but the relative dryness always saves any great discomfort. Many invalids reside in these localities, especially the tuberculous who need low altitude treatment under equable conditions. Here are found the climatic advantages of pure air, abundance of sunshine, equable temperature and a few hours of dryness each day. Part of the twenty-four hours throughout most of the year in southern California is moist. Fogs are numerous in the spring and summer months for a part of many days, extending many miles over the inland places, usually 30 and often 50, and disappearing earlier the greater the distance from the ocean. The days of summer without these fogs are the hot, dry days; this is especially so for the inland resorts.

The chief charm of southern California is the great amount of sun through the greater part of the year, its equability, the foliage and vegetation, the out-door life possible for everyone and the sedative or relaxing effect produced, a paradise for children and old people and those handicapped by ill health.

People 40 years of age with pulmonary trouble or children with any tuberculous lesion do better in southern California near the coast or in her low altitude resorts than do young adults. The latter class, except those contra-indicated, should be sent to a high, dry altitude where the air is more stimulating and where the cold and changes of temperature usually act favorably.

It is hard to think that anyone should believe that there is no therapeutic value in climate. Dr. Hinsdale in a recent publication has emphasized the value of climatic treatment. He sent a question to the deans of medical colleges in several of our large cities. "What would you do for yourself, climatically, if you were told for the first time that you had incipient pulmonary tuberculosis?" All the answers were in favor of climatic treatment under the direction of a man who understood the disease. If such a question were put to you to-day what would your answer be?

Fifth and Spring Streets.

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## THE USE OF HYPODERMICS OF CITRATE OF IRON IN THE SECONDARY ANEMIA OF TUBERCULOSIS *

E. S. BULLOCK, M.D.
Physician-in-Chief to the New Mexico Cottage Sanatorium
AND L. S. PETERS, M.D.
Associate Physician New Mexico Cottage Sanatorium
SILVER CITY, N. MEX.

Some years ago, Dr. B. R. Shurly, of Detroit, urged on me the importance of using citrate of iron hypodermically in the secondary anemia of tuberculosis. Shortly before, it had been his privilege to visit Italy, where he became acquainted with the common practice of Italian physicians of using iron in this manner, and the very great success of the method as applied to almost all secondary anemias.

As all understand, a high altitude is in itself very efficient in the removal of the secondary anemia of tuberculosis, and, therefore, I began the use of iron hypodermically tentatively and only in those cases in which the anemia proved resistant to dietetic, hygienic treatment, plus residence in a high altitude. Thus, it may be seen that I have confined its use to the most unfavorable class of patients, furnishing a most rigid test of the usefulness of the method.

Employing the hemoglobin content as an index of the degree of secondary anemia, as well as an actual erythrocyte count, I found that the hypodermic use of the citrate of iron permitted me to control the anemia with

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

almost mathematical precision, and that it actually in no single instance failed to improve the quality of the blood to at least some degree in the 256 cases in which we had employed it. I would like to emphasize that over 70 per cent. of these cases are in the advanced and far advanced classes, in which the anemia is a commonly manifested phenomenon, and in which we have the right to expect the least from any remedial measure.

I found it to be uniformly successful in raising the hemoglobin standard to normal in all cases in which the patient might be considered to be doing well, or in which the status quo was seemingly maintained; that in most cases it required but thirty or forty consecutive daily doses to accomplish the ideal of such medication, and, as before stated, in no instance whatever did it fail to be efficient, at least in some degree.

As time went on and I became impressed with the scientific exactness of the method, its employment was made a routine procedure in all cases in which there was a reduction of 10 per cent. or more in the hemoglobin content. This was done for the purpose of removing as quickly as possible at least one of the manifestations of tuberculous toxemia, without awaiting the considerably slower restoration of the blood which follows the combination of high altitude and sanatorium treatment. During the past five years there has been a slight improvement in our results in the treatment of all classes of pulmonary invalids. As we have changed our methods in no other particular, I feel safe in attributing the improvement to the hypodermic use of iron.

In a paper before the National Association for the Study and Prevention of Tuberculosis, at the recent Denver meeting, my associate, Dr. L. S. Peters and myself, presented the tabulated statistics of our use of iron. I would refer those interested in the actual facts on which this paper is based, to our joint presentation of the subject before the Denver meeting. Heretofore, I have referred only to the use of citrate of iron in doses of 0.05 gm. for the sole purpose of removing secondary anemia. We, however, in practice employ a number of formulas in which the citrate of iron is combined with metarsenate of soda, strychnin, glycerophosphates, etc., the purpose being to utilize the alterative tonics of demonstrative value. We have not found it necessary to use a larger dose of citrate of iron than .05 gm. Others, who have used larger doses, have observed sudden vomiting to follow its administration.

The technic of the method is to employ the ordinary hypodermic syringe and needle, selecting the buttock as the least inconvenient site of injection, and giving an injection daily until the result is obtained.

Under ordinary conditions, I would not consider it necessary to explain the source of the iron we employ. Having recommended this method to a great many physicians, however, we have received many complaints of marked irritation at the site of injection, sometimes continuing for hours, where in our experience we have never witnessed this phenomenon, and patients complain so little of the subjective sensations following injections that they will often voluntarily request a so-called course of iron for its general tonic effect. On inquiry we have discovered that those instances in which local irritation followed the injection, some of the American preparations of iron had been employed. It seems, therefore, that this paper would be wholly incomplete without mentioning the fact that we obtained these preparations from the Italian pharmaceutical houses, as they have been much more successful in manufacturing preparations free from irritating local effects.

## ABSTRACT OF DISCUSSION

### ON PAPERS BY DRS. ROTHSCHILD, BARLOW AND BULLOCK

DR. WILLIAM C. VOORSANGER, San Francisco: Dr. Rothschild has quoted Brauer and Spengler in their report of 102 patients treated by artificial pneumothorax. I have studied their monograph very carefully, and I did not get the impression that their results were uniformly good. In their work they draw no conclusions. They simply give the indications for producing nitrogen compression of the lung, and the results therefrom, some of which were fairly good, but many were negative. They only reported one case of hemoptysis treated in this manner, and this patient died two weeks after the compression had been made. Dr. Rothschild certainly deserves great credit for pioneering artificial pneumothorax in this part of the country, and unquestionably this method should be attempted in those cases in which the hemorrhages cannot be stopped by any other means, and in which the tuberculosis can be with certainty diagnosed as limited to one lung, or in which the case is absolutely hopeless and we must try some therapeutic measure.

I agree with Dr. Barlow in the statements he has made. His remarks concerning the patient living in a climate best adapted to his condition should impress us, but I would go still further and insist that a patient with tuberculosis should remain in the climate where he has received his cure. I have seen patients who have been cured or improved in Arizona or southern California, come back to northern California and break down very rapidly. Only recently I was called to see a patient who had been home one week from southern California, discharged as cured. Although he lived in a very lovely bungalow in the Piedmont hills, and carried out all the instructions he had received in the south, he was taken with a very severe hemoptysis. It lasted five days, and the patient's condition at the present time is none too promising. This is only one illustration of how a patient suddenly changing climate may suffer bad results.

DR. JOHN W. FOSS, Phoenix, Ariz.: Dr. Rothschild's paper is most interesting, yet from personal observation I would advise against placing too much confidence in this proceeding. As a last resort I would most certainly advise its use after the results described by Dr. Rothschild. I have seen at post mortem a case in which the lung had been compressed with nitrogen gas for some time, yet the hemorrhage which produced death was from the lung so compressed. The length of time of compression may have been a factor in this instance. Dr. Barlow's advice that both physician and patient should familiarize themselves with conditions of life in the open air of the western country is exceedingly valuable. It is the exception to find an eastern physician who understands the conditions to which he sends his patient in the west. Any physician in the southwest would be glad to give his fellow practitioner any information he may wish. Mayor Alexander at the general meeting very forcibly brought out the fact that many patients, particularly tuberculous patients, are sent into the West for the benefit of their health without means and without a knowledge of existing conditions. This is positively cruel, not only to the patient, but it is placing an unreasonable expense on the people of the West. For instance, Maricopa County, Arizona, spends at least $12,000 a year for the care and support of indigent patients sent there by physicians and friends of the patients who do not understand the conditions under which they must live. Every patient should have sufficient resources to be able to expend at least $1,000 yearly for his living and personal expenses. Dr. Barlow states that all tuberculous patients between the ages of 17 and 40 years should go to a high, dry climate. I will agree with him that they should go to a dry climate with a high percentage of sunshine, but I positively disagree with him that they should all go to a high altitude, especially when they can be sent to a dry climate at a moderate altitude. As Dr. Voorsanger says, the patient suffering from tuberculosis should be cured at as nearly as possible the same altitude as that in which he wishes to make his future home. If he wishes to live in a high altitude, then he should go to the mountains, but if he wishes to live at a moderate or low altitude he should go to

that resort where he can have the benefit of dry, pure air and a maximum of sunshine. At Phoenix the humidity averages the lowest of any place in this country. It has a high percentage of sunshine; the average wind movement is 4.7 miles per hour for the year; the annual rainfall is only 6.7 inches; the sensible temperature or wet-bulb thermometer rarely goes above 72 degrees in the summer and the altitude is only 1,080 feet. No place in the world presents so nearly an ideal condition for the recovery of the tuberculous patient who wishes to make his future home at a low altitude at the minimum risk of reinfection or relapse.

Dr. James W. Laws, Lincoln, N. M.: Eight or nine years ago I had occasion to use, by means of the Murphy apparatus, nitrogen gas compression of the lung in pulmonary hemorrhage in a number of cases. As with other remedies for pulmonary hemorrhage, in many cases the result seemed marvelous, while in other cases pleuritic adhesions prevented compression of the lung, and where the adhesions were torn loose harm resulted. It is difficult to know from which lung the bleeding comes, but a knowledge of the physical examination and clinical symptoms of the patient before the hemorrhage, along with what can be ascertained at the time of the hemorrhage, usually enables one to form an idea which lung is bleeding and whether compression of the lung is indicated or not. When sufficient vesicular breathing space is left over the other lung, after compression of the bleeding lung, and in cases in which there is reason to believe the bleeding comes from a congested area of recent infection, and in cases in which there are recurrences of bleeding from day to day, sapping the vitality of the patient and not controlled by ordinary measures, I believe that the compression of the bleeding lung by nitrogen gas is a valuable remedy.

Dr. Max Rothschild, San Francisco: Artificial pneumothorax should be used with caution. But it is always possible, if one should inflate the wrong side, to deflate again. It is just as easy to take out gas by means of a bottle with a vacuum as it is to take out fluid after a pleuritic exudation. It has been asserted that the results of Brauer and Spengler are not uniformly favorable. This assertion seems to overlook the fact that many of their cases appeared to be pretty nearly hopeless from the start; and even some of these patients were cured by artificial pneumothorax. If Brauer and Spengler consider the artificial pneumothorax contra-indicated in hemoptysis, I can only say that I do not agree with them. The indication in severe cases of hemoptysis is a most logical one. In Brauer and Spengler's publication of 102 cases, I found only one of hemoptysis, and this was a hopeless case in which the patient died about two weeks after the hemorrhage. As far as I remember, this is the only case in which Brauer or Spengler advocated pneumothorax on account of the hemoptysis, which stopped promptly after the pneumothorax was made. The patient died, not as a result of the pneumothorax, but of the tuberculosis which was far advanced at the time of the operation. Dr. Foss is correct when he says that a hemorrhage from the compressed lung is possible, because it stands to reason that a diseased lung is so tightly adherent to the chest wall that a complete compression is not possible. But if a complete compression is possible, there does not exist any logical reason why a hemorrhage of the lung should not stop just as a bleeding blood-vessel would stop under compression during a surgical operation.

Dr. W. Jarvis Barlow, Los Angeles: Patients should have no climatic change unless they can be put under as good medical attention as at home. The statement is correct that individuals even then should not go unless one is sure to whom one is sending them and what the patient will do. If one is sure that the patient will do as he is told, then he should have climatic treatment. Otherwise they will get into the hands of somebody who will set them adrift, as so often happens here in our southern country. Dr. Voorsanger spoke of the return of the disease if the patient returned to his home. That is true. He should stay until he has immunity or cure and then he is able to live elsewhere. The treatment consists in individualizing the patient. There are patients who gain benefit but not an arrest. I think often patients go away from the place where they have made that arrest too early. In regard to Dr. Foss' criticism of my statement in regard to altitude, I expected that would be challenged. That young people should be in high, dry altitudes, I know is true. Of course they might do well in a climate of low altitude, but many need the stimulating effect of the high altitude. After 40 I do not think altitude is so important.

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## THE DIETETIC MANAGEMENT OF PELLAGRA

GEORGE M. NILES, M.D.
ATLANTA, GA.

While the etiology of this malady is by no means settled, most observers agree that in its major manifestations it is a gastro-intestinal disease, and since it is such, curative measures for the irritation of this tract, combined with supportive measures for the upkeep of the body, are of prime importance.

There are some principles in its dietetic management rather differing from that properly accorded to gastro-intestinal disturbances in other disorders, which seem worthy of consideration.

Until the theory is exploded that pellagra is due to some toxic substance in either sound or spoiled corn or corn products, I feel that we are in duty bound to give our patients the benefit of the doubt by excluding such articles from the dietary.

Simply to prohibit this class of foods, without entering into details, is likely to result in misunderstanding with consequent failure. I recently knew of a north Georgia mountaineer, who obediently cut out corn bread and grits, but did not consider it necessary to omit his daily quota of corn whiskey.

Bass, of New Orleans, also reports a female pellagrin who denied ever having eaten corn food of any sort. She had been reared in a section of the country and in a family in which corn was considered good food for horses and hogs, but not for people. It seemed this case was about to disprove the maize theory, when her husband reluctantly admitted that she was in the habit of eating corn starch secretly—a pound or more daily.

That this morbid craving for starch—amylophagia—is not so very uncommon, is shown by the fact that three women, one white and two negroes, observed in the clinic for internal medicine at the Atlanta School of Medicine during the last four months, have acknowledged this habit, though in each instance with evident unwillingness.

Another fact worth mentioning is the adulteration of the cheaper grades of flour with "corn hearts," a custom quite prevalent up to a short time ago. I am informed, however, that, since the pure food laws have been enforced, this adulteration has practically ceased.

Occasionally some case of pellagra is reported, in which there is no apparent evidence that the sufferer has ever eaten any corn products, but I am confident, if the history is thoroughly enough investigated, corn in some form will be found to have entered into the dietary at some time.

Beginning with the earlier gastro-intestinal manifestations, we are generally called on to treat an intermittent and seemingly causeless diarrhea. This early diarrhea I believe to be mainly of central origin, and, to an extent, compensatory. For this reason it is not wise to cut down too greatly the daily amount of food, nor does a very limited dietary seem to exert any marked effect on the disordered bowels.

The patient whose incipient pellagrinous symptoms are recognized is known to be in for a long and taxing siege, and his daily caloric requirements should be guarded most zealously.

The woody vegetables and those yielding a large amount of residue are mechanically contra-indicated at any time diarrhea is present, but care should be exercised that they are replaced by other nourishing articles.

It seems that all along in the course of the disease the flesh proteins are specially well borne, and even in those cases in which there is much active gastro-intestinal irritation, they agree better than in a like amount of irritation from other causes. Tender broiled steak or roast beef may be given once or twice daily, or, if the mouth is too sore to chew, either the scraped beef or that ground in a sausage mill may be given. This also applies to the white meats.

Eggs are generally permissible, though if there is a flatulent tendency, it is well to give only the whites. The albumin of raw eggs may be prepared in various ways, limited only by the ingenuity of the nurse, and I have never known them to set up any trouble.

Sweet milk is valuable when it agrees, but unfortunately many pellagrins show an idiosyncrasy against it. Flatulence frequently follows its ingestion, and in many patients the stomachs furnish enough rennin to coagulate the milk promptly, but are tardy in disintegrating the curds, so there is present a sense of weight and discomfort in the epigastrium. Peptonizing the milk occasionally obviates this, but very few pellagrins relish peptonized milk.

Buttermilk is a most useful article of diet, seldom upsetting the stomach or intestines. It has served me well in so many cases that I can in general recommend it. The artificially soured milk, or lacteal champagne, containing all the fat, is also worth a trial, and is often found highly appetizing.

Where constipation is in evidence, oatmeal, tender vegetables (in puree form), thoroughly baked Irish—not sweet—potatoes, or cereals with but little sugar, will aid the peristalsis of the intestines.

My experience with pellagra has made me chary in the use of alcohol. It would appear that the possible food value of alcohol is more than counterbalanced by its malign effect on the gastro-intestinal mucosa; so, when possible, I omit it entirely from the dietary.

In exceptional cases, when I permit whiskey or brandy, I see that it is well diluted, either as milk punch, eggnog, or with grape juice or lemonade.

Practically the same may be said concerning the alcoholic proprietary food preparations. As an aid to the daily regimen, or to tide over some dietetic emergencies, some of these are useful; but as a dependence to supply bodily caloric requirements, they are a "delusion and a snare." To furnish sufficient calories with these preparations alone would keep the patient in a state of alcoholic coma; plus all the resultant evils reflected on the whole alimentary tract. This is no imaginary picture, I assure my readers; the fact has been impressed on me by some melancholy instances coming under my observation, in which zeal had outstripped discretion, and in which evidences of alcoholic stimulation were thoughtlessly attributed to other causes.

During the whole course of pellagra, the patient should be nourished to the limit of assimilation, and in most instances the gastro-intestinal tract will "stand for" and care for more aliment than when similarly inflamed from other diseases.

The foregoing brief suggestions I trust may be of service, as they are deduced from a considerable number of dietetic experiences in the management of this protean malady; and when the problem of upkeep in pellagra is solved, the outlook for the sufferer is greatly brightened.

920 Candler Building.

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# IMMUNITY IN TUBERCULOSIS

## ITS PRODUCTION IN MONKEYS AND CHILDREN *

GERALD BERTRAM WEBB, M.D.
AND
WILLIAM WHITRIDGE WILLIAMS, M.D.
ASSISTED BY A. M. FORSTER, M.D., AND G. BURTON GILBERT, M.D.
COLORADO SPRINGS, COLO.

In former publications[1, 2] we have shown that large numbers of virulent tubercle bacilli may be inoculated into guinea-pigs without producing tuberculosis, provided that very few bacilli are at first inoculated, and that the numbers are increased slowly. In addition, Lieb[3] has shown the possibility of inoculating rabbits with virulent bovine tubercle bacilli in a similar manner.

The work now reported will indicate that monkeys (*Macacus rhesus*), animals which, when kept in captivity are exceedingly vulnerable to tubercle bacilli, can also be safely given increasing amounts of virulent human tubercle bacilli, if inoculated in a manner similar to that in which the animals above referred to were inoculated.

Twelve monkeys (*Macacus rhesus*) were procured and were tested with Old Tuberculin according to Römer's[4] method for cattle. A positive reaction is indicated by at least a 75 per cent. increase in the measurement of the skin-fold.

When we were satisfied that the monkeys were probably not already infected with tuberculosis, we started inoculations with the living virulent human tubercle bacilli, June 8, 1910, and the following plan indicates how each animal was to be treated:

1. Control.
2. 25 bacilli in one dose and no further inoculations.
3. 100 bacilli in one dose and no further inoculations.
4. 200 bacilli in one dose and no further inoculations.
5. Increase slowly, 1, 3, 5, 10, 15, 20 bacilli, etc.
6. Increase slowly.
7. Increase rapidly, 1, 5, 10, 20, 50, 100 bacilli, etc.
8. Increase rapidly.
9. Increase slowly, 5, 10, 15, 20, 25, 30 bacilli, etc.
10. Increase rapidly, 5, 15, 45, 75, 125, 200 bacilli, etc.
11. Control.
12. 50 bacilli at one dose and no further inoculations.

The culture used in the following work was isolated Jan. 19, 1909, by Professor M. A. Barber with the aid of antiformin. The patient, from whom it was isolated, died of pulmonary tuberculosis a few days later.

On account of scarcity of guinea-pigs, we were not able to test the virulence of the culture on guinea-pigs

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* A large number of the tables are omitted on account of lack of space, but they are included in the Transactions of the Section and in the authors' reprints, a copy of which will be sent by the authors or by THE JOURNAL, on receipt of a stamped, addressed envelope.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

* From the Laboratory of Cragmor Sanatorium.

1. Webb, Williams and Barber: Immunity Production, etc., Jour. Med. Research, xx, No. 1; Immunity Production, etc., Tr. VI Internat. Cong. of Tuberc.

2. Webb and Williams: Immunity in Tuberculosis, Jour. Med. Research, xxiv, No. 1.

3. Lieb: Immunity Production in Rabbits, etc., Jour. Med. Research, xxii, No. 1.

4. Römer: Ueber intrakutane Tuberculinanwendung, Beitr. z. Klin d. Tuberk., 1909, xii, 182.

until May 22, 1911. At this time Guinea-pig 1, weight 744 gm., received a subcutaneous inoculation of 35 bacilli; Guinea-pig 2, weight 575 gm., received 75 bacilli; Guinea-pig 3, weight 723 gm., received 125 bacilli.

All these pigs were killed a few weeks later and found to be infected with active tuberculosis.

After five months had elapsed since the previous tuberculin inoculations, the monkeys were again tested by the Römer method.

Two and a half months later, the weekly living bacilli inoculations still being continued, the Römer test was again applied.

It appeared from these tests that Monkeys 8, 10 and 11 must be infected, having given in their skin-fold

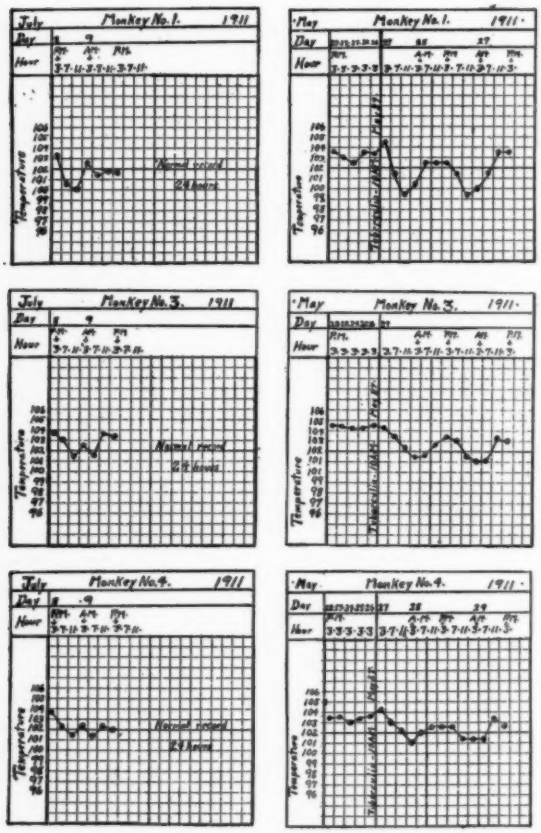



Fig. 1.—Temperature charts for Monkeys 1, 3 and 4.

measurement a percentage increase of 75 and over. The amount 20 mg. was unusually large and was given by mistake. Monkey 11, a control, was now killed and careful search was made for the presence of tuberculosis. Smears were made from the bronchial, mesenteric and inguinal lymph-glands and stained by the Ziehl-Nielsen and Gram methods. No tubercle bacilli could be found. Portions of the glands were macerated and injected into a guinea-pig, Feb. 10, 1911. This pig was tested intradermally, April 9, 1911, with 20 mg. Old Tuberculin. No reaction.

May 28, 1911, the guinea-pig was killed. Necropsy showed no evidence of tuberculosis. From the fact that Monkey 11 was proved to have had no infection with tuberculosis it would seem that the positive intradermal reactions were a result of tuberculoprotein hypersensitiveness. Monkeys 7 and 8 were again tested, May, 1911, with 20 mg. Old Tuberculin intradermally. No reactions followed. The conjunctival test was again applied as follows:

May 25, 1911. One drop of 2 per cent. O. T. (Cutter's) in 9 per cent. sodium chlorid instilled into the right eye of each monkey.

May 26. No change.

May 27. No change.

It was now decided to give the remaining monkeys a subcutaneous injection of 5 mg. Old Tuberculin and to watch the temperatures resulting. The work of White and Fox[5] was carefully followed and the accompanying temperature curves show no increase of temperature following the injection of the tuberculin.

It will be noticed in the table of Monkey 2 that a severe night drop occurred on the second day and the monkey became so ill it was thought he would die. He

TABLE 2.—DATES OF INOCULATIONS AND THE NUMBERS OF BACILLI INOCULATED

| Date | Monkeys Nos. 5 and 6 Each No. of bacilli | Monkeys Nos. 7 and 8 Each No. of bacilli | Monkey No. 9 No. of bacilli | Monkey No. 10 No. of bacilli |
|---|---|---|---|---|
| 6/ 8/10..... | 1 | 1 | 5 | 5 |
| 6/15/10..... | 3 | 5 | 10 | 15 |
| 6/23/10..... | 5 | 10 | 15 | 30 |
| 6/30/10..... | 10 | 20 | 20 | 50 |
| 7/ 7/10..... | 15 | 50 | 25 | 75 |
| 7/14/10..... | 20 | 125 | 30 | 105 |
| 7/28/10..... | 30 | 300 | 40 | 150 |
| 8/ 4/10..... | 40 | 450 | 55 | 200 |
| 8/11/10..... | 50 | 700 | 70 | 250 |
| 8/18/10..... | 65 | 1,000 | 90 | 325 |
| 9/ 7/10..... | 80 | 1,500 | 115 | 400 |
| 9/17/10..... | 100 | 2,000 | 140 | 500 |
| 10/ 6/10..... | 125 | 2,800 | 175 | 600 |
| 10/15/10..... | 150 | 4,000 | 185 | 700 |
| 10/20/10..... | 175 | 5,500 | 215 | 800 |
| 10/28/10..... | 200 | 7,000 | 250 | 900 |
| 11/ 4/10..... | 225 | 9,000 | 300 | 1,000 |
| 11/11/10..... | 250 | 11,000 | 350 | 1,100 |
| 11/17/10..... | 275 | 13,500 | 400 | 1,200 |
| 11/25/10..... | 300 | 15,000 | 450 | 1,300 |
| 12/ 1/10..... | 350 | 18,000 | 550 | 1,500 |
| 12/ 8/10..... | 400 | 21,000 | 650 | 1,700 |
| 12/15/10..... | 450 | 25,000 | 750 | 2,000 |
| 12/22/10..... | 500 | 30,000 | 850 | 2,400 |
| 12/29/10..... | 550 | 35,000 | 1,000 | 2,800 |
| 1/ 5/11..... | 600 | 40,000 | 1,200 | 3,300 |
| 1/12/11..... | 700 | 50,000 | 1,500 | 4,000 |
| 1/19/11..... | 800 | 60,000 | 1,800 | 4,800 |
| 1/27/11..... | 900 | 65,000 | 2,100 | 5,600 |
| 2/ 3/11.....1,000 | | | 2,400 | |

recovered the next day, but it was decided to kill him and also Monkey 8, which had received such large doses.

The autopsies of these monkeys gave no evidence of tuberculosis. Smears were made from a large number of lymph-nodes and stained by Ziehl-Nielsen and Gram methods. No tubercle bacilli could be found. Portions of their lungs, lymph-nodes, spleen, liver and kidneys were macerated and injected into guinea-pigs. The guinea-pigs showed no evidence of tuberculous infection at autopsy. Portions of the macerated organs were treated with antiformin, but no tubercle bacilli could be found.

The feces of each animal were twice examined by the antiformin method for tubercle bacilli; none, however, could be found. The normal night drop of a healthy monkey is well shown in the case of Monkey 1. It will be noticed that some interference with this night drop following the injection of the 5 mg. Old Tuberculin seems to have occurred in some of the monkeys. This may be due to the presence of specific antibodies or to

5. White and Fox: Observations on Monkeys After Injections of Koch's Old Tuberculin, Tr. VI, Internat. Cong. of Tuberc.

tuberculoprotein hypersensitiveness as also the curious effect on Monkey 2 may have been.

Antibodies in the serums of the monkeys were tested for by means of the meiostagmin reaction described by Ascoli[6] and Izar.[7] This reaction depends on the decrease in surface tension which occurs when the specific antibodies in serum unite with the appropriate antigen when incubated together. The surface tension is accurately measured before and after incubation by means of the stalagmometer of Traube.

We prepared the tubercle antigen from the same culture used in the inoculation of the monkeys, following the direction of Izar and Ascoli.

The monkey serum was obtained in large quantities by dissecting out the jugular vein under chloroform anesthesia.

The serum from Monkey 2 representing an almost normal monkey and the serum from Monkey 8 representing an animal that had received excessively large doses of tubercle bacilli, both gave negative results. The test was applied June, 1911.

Emery's[8] method for measuring quantitatively the specific antibodies in a given serum was also made use of.

The test is an application of the Bordet-Gengou phenomenon. When the antibodies combine with the appropriate antigen, complement is extracted and hemolysis prevented. Emery has suggested a means of measuring the time necessary for complete absorption of complement which he terms the absorption time, and he uses it as an index of the amount of antibody present. In general the more antibody present the shorter the absorption time.

For carrying out the test we followed the technic of Emery and used (1) a sterile emulsion of tubercle bacilli in normal saline, from the same culture used in the inoculations; (2) fresh serum collected in a Wright's capsule from the ear of each monkey; (3) an emulsion of sensitized red corpuscles. This consisted of one part washed human corpuscles added to four parts of immune serum. The immune serum was obtained from a rabbit which had been repeatedly injected with well-washed human red corpuscles. The use of the red corpuscles of the monkey for injecting the rabbit would have been better. Our work thus far seems to show that monkey serum has a natural amboceptor for the red corpuscles of some people, so we may avoid the use of rabbits' immune serum in future tests.

Serums from Monkeys 1, 2, 7 and 8 were tested in the manner suggested by Emery and failed to show any complement deviation, the absorption time being prolonged in each instance. The tests were made in June, 1911, after inoculations had ceased.

As yet we have made no attempt to demonstrate other possible antibodies.

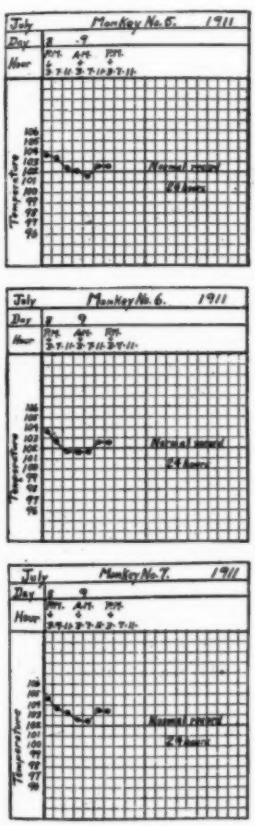



Fig. 2.—Temperature charts for Monkeys 5, 6 and 7.

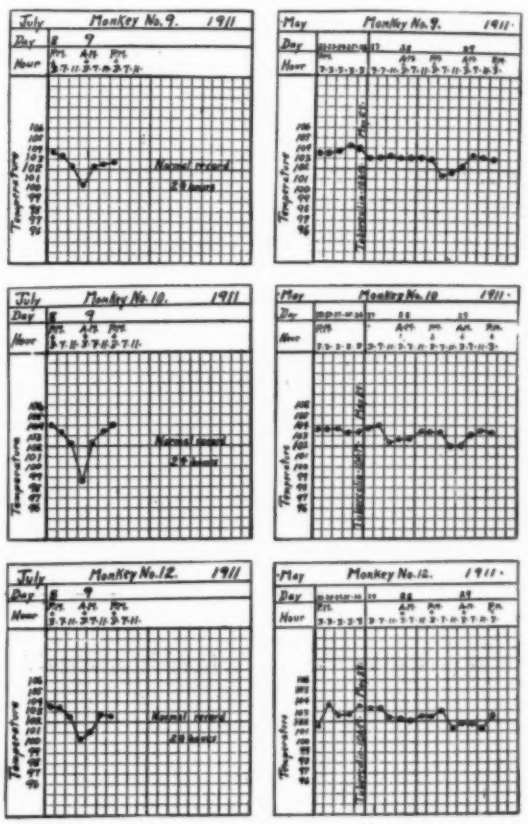



Fig. 3.—Temperature charts for Monkeys 9, 10 and 12.

6. Ascoli: The Meiostagmin Reaction, München. med. Wchnschr., Jan. 11, 1910.
7. Izar: München. med. Wchnschr., April 19, 1910.
8. Emery: Immunity Reaction in Diagnosis, Lancet, Feb. 25, 1911.

Differential leukocyte counts were made. The total leukocytes of monkeys per c.mm. average about 15,000. The differential counts were made from blood obtained when the animals were fasting.

We have shown[9] that differential leukocyte counts are of some value in indicating the degree of tubercle infection. It will be seen from Tables 4 to 15 that no evidence of infection can be deduced.

Judged by the high percentage of lymphocytes, and also from their dentition, the monkeys were young animals.

It must be remembered that the high percentage of lymphocytes which persist may be due to the altitude.[9]

Two boys, G. R., aged 3 years, and W. R., aged 3 months, were first tested by means of the von Pirquet skin test and both were found to be negative. The father of these boys died a few weeks later of pulmonary tuberculosis and the mother gave evidence of slight tubercle activity in one lung, accompanied by irregular temperature.

The children were inoculated with bacilli from culture B.[2] as indicated by the following figures:

TABLE 18.—NUMBER OF BACILLI INJECTED

| Date | No. bacilli | Date | No. bacilli | Date | No. bacilli |
|---|---|---|---|---|---|
| 10/20/10..... | 1 | 11/25/10..... | 18 | 12/29/10..... | 100 |
| 10/27/10..... | 3 | 12/ 1/10..... | 25 | 1/ 5/11..... | 125 |
| 11/ 3/10..... | 5 | 12/ 8/10..... | 35 | 1/12/11..... | 150 |
| 11/10/10..... | 8 | 12/15/10..... | 50 | | |
| 11/17/10..... | 12 | 12/22/10..... | 75 | | |

Total number bacilli received by each child, 607.

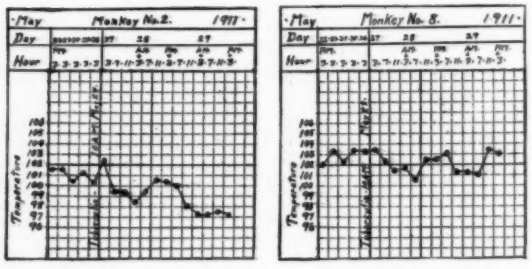



Fig. 4.—Temperature charts for Monkeys 2 and 8.

The children were now again tested by means of the von Pirquet skin test and again the reaction was negative. We realize the intradermal test might have been more thorough, but as our results suggest with this test in monkeys and, as Krause[10] reports, with this test in guinea-pigs that it would seem possible to sensitize to tuberculoprotein, it is perhaps fortunate that we did not employ it. The children have gained weight and are thoroughly healthy to date. May 22, 1911, after four months' freedom from inoculations, the children were again tested and found again to be negative to the von Pirquet reaction.

## CONCLUSIONS

1. We have not yet ascertained the exact number of tubercle bacilli of the culture employed which will infect a rhesus monkey.

2. A rhesus monkey, weighing 2,332 gm., withstood infection when injected at one dose with more than six times the dose of human tubercle bacilli which caused tuberculosis in a guinea-pig weighing 744 gm.

3. Two monkeys each received safely virulent human tubercle bacilli enough to kill at least 12,000 full-grown guinea-pigs.

4. No antibodies so far have been satisfactorily demonstrated in the sera of the vaccinated monkeys.

5. The temperature charts indicate the possible presence of such antibodies which might be interfering with the normal night drops following the subcutaneous inoculation of Old Tuberculin for diagnostic purposes.

6. It would appear that it is possible by the intradermal inoculation of Old Tuberculin to sensitize the skin of a monkey to tuberculoprotein.

7. Two children, both of whose parents were tuberculous, have been successfully vaccinated with upwards of 600 virulent human tubercle bacilli, without infection being produced to date.

Our grateful thanks are due J. E. Fuller, A.B., of Colorado College, for a large amount of valuable assistance.

1222 N. Cascade.

9. Webb and Williams: Some Hæmatological Studies in Tuberculosis, Tr. Nat. Assn. for the Study and Prevention of Tuberc., 5th annual.

10. Krause: Hypersusceptibility to Tuberculo-protein, Jour. Med. Research, xxiv, No. 2.

## ABSTRACT OF DISCUSSION

DR. J. F. HULTGEN, Chicago: Some time ago I was able to show that tuberculosis in its three stages has three different kinds of blood-pictures. In the incipient stage of tuberculosis I have found the two curves, i. e., the polynuclears and mononuclears, close together, and even overlapping. In the second, the toxic stage, we have a definite corresponding anatomic-pathologic substratum and a definite blood-picture. In the third stage there is mixed infection, and the total white curve rises with the advance of the disease. Dr. Webb has succeeded in immunizing two persons, who have kept their immunity for months. I think this immunity may extend even further, for this reason: All diseases followed by long immunity have a negative phase lasting a long time; at least that is true in the typhoid fevers. Why those diseases which are followed by long immunity should show this blood-cell production I do not know. Andrews of London has done some work in that direction. He believes that the incubation of typhoid infections is nothing but the extended negative phase of leukopoiesis with the polynuclears screened within the lung capillaries. That, however, has not been confirmed. Dr. Webb is on the right road and immunity from tuberculosis in animals, and presumably in the human, is not only possible but likely. I think he has taken the first step toward establishing a ground on which can be based the immunity from tuberculosis, which kills so few and makes so many sick; whose mortality is so small, and whose morbidity is so great. If a patient dies *with* tuberculosis, that is not saying that he dies *of* tuberculosis. As to whether he is in possession of a tuberculous infection is for us to decide, and I think Dr. Webb has made this easy.

DR. ROY E. THOMAS, Phoenix, Ariz.: Dr. Webb says the mononuclears in his monkeys averaged about 70 per cent., and this increase he thought possibly was due to the altitude. Dr. Watkins of Phoenix has recently made some experiments which show that we have there in normal individuals a percentage of leukocytes higher than they have in Colorado Springs. I think that altitude might perhaps fail to explain the high percentage of mononuclears in monkeys at Colorado Springs. Dr. Webb did not infect any of his monkeys. May it not be possible that all of his monkeys were already immune to tuberculosis?

DR. E. R. LE COUNT, Chicago: I am reminded by this report of instances in which tuberculosis apparently finds its chief soil in the bones, instances of generalized miliary tuberculosis, with fever and enlarged spleen and outbreaks of tuberculous osteomyelitis in different bones. In some such cases the patient's general health suffers but little and there is an apparent immunity on the part of tissues other than the bones. I do not make this comment to hint at the possibility of bone tuberculosis in the monkeys Dr. Webb examined, but to call attention to the habit, so to speak, that the bacillus has formed in such cases, of growing in bones. The other view-

point I have already stated in suggesting an immunity for other parts of the body than bones.

DR. M. P. RAVENEL, Madison, Wis.: I had the pleasure of seeing these monkeys and of going over the work with Drs. Webb and Wilson. I am proud of the fact that America can claim credit for the bulk of the work done in the immunization of tuberculosis. While Dr. Webb was not born in this country, he has become an American citizen and it looks as if we were going to get at the root of the matter in America. There are two things in this work which are of interest to me: one is the lack of antibodies, or at least inability to demonstrate them. If we know anything about immunity it is that it depends on the production of antibodies. That is not true always but, generally speaking, we must believe that immunity is due to the production of antibodies. The second point of interest to me is the infection of human beings. We know Behring's theory, that human beings are inoculated with bovine tuberculosis in early life; and Calmette's idea, that those of us who retain our immunity to tuberculosis are those who have had a single large dose, not sufficient to overcome the organism, or repeated small doses so spaced as to allow complete recovery between doses; that those who remain healthy have been vaccinated and have become immune. The question comes up, how much of a dose must a person take to be overcome by tuberculosis? I hope Dr. Webb will further explain the lack of the antibodies.

DR. GERALD B. WEBB, Colorado Springs, Colo.: I take it that the question of altitude would come in in regard to the increased lymphocytes found by Dr. Thomas at Phoenix, for we have found even an altitude of 800 feet gives higher lymphocyte counts than does sea level. I am grateful to Dr. Le Count for mentioning the possible bone infection. It is most important and we will pay more attention to this possibility in the monkeys. I do not believe any tuberculous lesions are present in them anywhere to date. We realize how healthy and vigorous they are when we have to catch them. Replying to Dr. Ravenel's questions concerning antibodies: We have so far failed to demonstrate them unless the interference in the night drop of some of the monkeys following the tuberculin test indicates their presence. In a patient who gets well naturally from diphtheria or even tetanus, antibodies cannot be found in the blood. Antibodies are probably a second line of defense, whereas our inoculations have probably only increased the first line, or the physiologic defense. Our monkeys are now in their second season. They have been kept in small cages in a small room but with the windows open. This room is used for boot-cleaning. Upwards of fifty tuberculous invalids have been in the room at different times and part of the time the monkeys were cared for by a man with advanced pulmonary tuberculosis. As the charts indicate, the lymphocytes of these monkeys still remain high in spite of the monkeys becoming older. This is no doubt the result of the altitude as we have shown to be the case in other animals. As the lymphocyte is considered the natural antagonist of the tubercle bacillus, our work of inoculation with live bacilli has been done under the most favorable conditions on account of the increased numbers of these cells present at this altitude.

**The Subhyoid Tug.**—Dr. M. L. Graves, Galveston, Texas, writes: The tracheal tugging is often a pronounced and important sign in thoracic aneurysm. It is, however, not so important in recent years, since radiography and other exact methods enable us to diagnose tumors of the chest at an earlier stage and with considerable accuracy. I have observed in a number of patients with thoracic aneurysm with short, thick necks, considerable difficulty in grasping the cricoid cartilage so as to elicit this sign. This is true also in patients with unusual prominence and sternal approach of the sternomastoid muscles, and in some fat necks. Under such circumstances it is comparatively easy to grasp the body of the hyoid bone at its outer and inferior borders and push it up a little and elicit a distinct tug. It is not so strong usually as the cricoid tugging, but is distinct sometimes when the latter is unavailable. It might be designated as the subhyoid tug.

# EFFECTS OF HYPODERMIC INJECTION ON THE SECONDARY ANEMIA OF CHRONIC PULMONARY TUBERCULOSIS *

W. JARVIS BARLOW, A.B., M.D.
AND
ROBERT L. CUNNINGHAM, A.B., M.D.
LOS ANGELES

For several years iron preparations have been used hypodermatically in the treatment of secondary, and arsenic in the treatment of pernicious, anemia. In 1908 Peters[1] reported favorable results after two years' use of iron citrate hypodermatically in the treatment of secondary anemia of tuberculosis, employing a number of formulas of different combinations.

Later Morse[2] reported satisfactory results even in severe cases with citrate of iron subcutaneously in the treatment of anemia in infancy. He found the rise in the percentage of hemoglobin was more rapid than that in the number of red blood-corpuscles.

Dickinson,[3] on hypodermic treatment of anemia, says where medicinal preparations fail, when the anemia cannot be relieved, and where digestion is markedly embarrassed by medication, the hypodermic use of iron must be resorted to. Each of these authors speaks of the pain caused at the site of injection.

Of the beneficial effects of arsenic preparations hypodermatically, much has been published in recent years. It is to consider chiefly the use of organic preparations of arsenic in secondary anemia that this paper is written. Our attention was first called to this treatment one and one-half years ago by Dr. Bullock, at Silver City, who showed some results that seemed most favorable and asked one of us (Barlow) to try its effects here.

## CASES

Twenty-eight patients were treated, thirteen of whom were in Stage II and fifteen in Stage III.

Many of the first twenty patients had shown little if any improvement on the regular hygienic-dietetic treatment. Some had lost in weight, some had been for a considerable time stationary in weight, and some had gained slowly, though still below their average weight in health. No early case was taken for the reason that such have, without exception, recovered under the routine treatment, or without special agents. It was desired to test the treatment on individuals for whom the routine treatment seemed insufficient. Some of the first twenty cases were looked on as hopeless (2, 8, 14 and 19), and others as capable of nothing more than improvement or arrest (1, 10, 13, 15, 16, 17, 18). In five cases, in Stage II, the prognosis was "fairly good," or "good" (3, 4, 5, 7 and 11); one, in Stage III, was a case of tuberculosis of the larynx, which had healed during tuberculin treatment and absolute rest for the voice for eight months. In this case, the weight had gone down under the higher doses of tuberculin (B.F.), although no febrile reaction was noted at any time, and the low weight was the special indication for the treatment here discussed.

In the second group of eight cases, three were in Stage III, and five were in Stage II, altogether a more favorable class of cases, although one was far advanced (25), and four (21, 24, 25, 28) were capable of nothing more

* One large table is omitted because of lack of space, but it is included in the Transactions and in the authors' reprints.
* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Peters, Leroy S.: Med. Rec., Oct. 10, 1908.
2. Morse, John Lovett: THE JOURNAL A. M. A., July 10, 1909, p. 107.
3. Dickinson, G. K.: Med. Rec., Sept. 3, 1910.

than arrest or improvement of the disease. In one case, treatment was abandoned after one month because of the complaints of a neurotic patient, and because the injection was followed by such severe reaction at the site of injection, ecchymosis, swelling, tenderness, local fever, etc. This case is not included in the number under discussion.

### PREPARATIONS USED FOR INJECTIONS

Early in our experience three patients received Italian preparations, e.g., citrate of iron with strychnin, or metarsenate of iron, etc. As these individuals received the domestic preparations over a much longer period of time, we shall not complicate the report by unnecessary details but shall report on the three principal preparations used: (1) iron cacodylate, (2) sodium cacodylate, and (3) arsacetin.

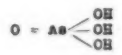
1. *Cacodylate of Iron.*—This is said to be iron in combination with cacodylic acid, $(CH_3)_2AsOOH$, and therefore an organic form of iron and arsenic. "Those organic arsenic combinations in which the metallic atom is directly attached to the carbon are only feebly poisonous, but in time seem to be changed to arsenious acid in the tissues and may then cause typical poisoning." (Cushny[4]). The combination used is put up in sterile ampules of glass, each holding 1 c.c. of the solution, which is a dose of 0.03 gm., i. e., 30 mg. The solution is of a reddish color, clear and transparent, keeps well without sedimentation or deterioration. When injected beneath the skin or into a muscle, it causes a sharp stabbing pain which passes away, usually within a few minutes, but which has been seen to persist for twelve to eighteen hours. Occasionally, discoloration of the skin, as from ecchymosis, is observed for as long as ten days, either with or without continued pain and tenderness in the part. In one case we discontinued the treatment on account of the intensity of the reaction, the patient being neurotic and reluctant to continue. In nearly all cases there is some induration at the site of injection, although it usually passes away within two days and is not commonly painful.

2. *Sodium Cacodylate.*—This contains sodium in combination with cacodylic acid. It is put up in the same sterile ampules as is the iron. It is a clear, colorless, watery solution, and the single dose is 1 c.c., which, in the strength used here, contains 0.05 gm., i. e., 50 mg. This solution also keeps well without clouding or depositing sediment. When injected beneath the skin or into a muscle it causes only slight discomfort or none at all, and we have seen no induration, ecchymosis or continued pain follow its use. When given twice a week, the same site for all injections may be employed if desired.

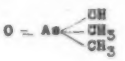
3. *Arsacetin.*—This is an acetyl derivative of atoxyl and is said to be much less toxic and much more stable than that more familiar drug. Atoxyl is $C_6H_5NHAsO_2$ and contains 37 per cent. of arsenic. Arsacetin is also put up in sterile ampules, each containing 2 c.c. of a 10 per cent. solution which is a dose of 0.2 gm., i. e., 200 mg. When sterilized in dilute solution it does not cloud and keeps better than when in more concentrated form.

Of each drug a single dose is contained in an ampule and the preparation is sterile and ready for use. A needle 1 to 1¼ inches in length and of small caliber, with a glass syringe of the required capacity (1-2 c.c.), is boiled and after the skin is cleansed with 95 per cent. alcohol, and the solution drawn into the syringe from the broken end of the ampule, the solution is injected deep into some muscle easily reached. We have most commonly used the deltoid muscle. Injections into the gluteal muscle would cause less pain, but the deltoid is very much more readily accessible and the pain is so slight that the patients prefer the more convenient location and offer little or no objection to the discomfort which accompanies it. So far, we have seen no abscess, and with even reasonable care none should occur. Occasionally, we have injected the various drugs just under the skin, but the intramuscular administration seems preferable on account of better absorption. Two injections a week have been given as routine; more frequent administration could doubtless be employed.

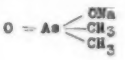
(1) Arsenic acid



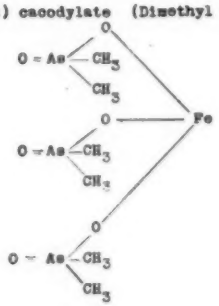
(2) Cacodylic acid (Dimethyl arsenic acid)



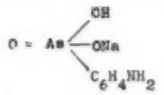
(3) Sodium cacodylate (Dimethyl sodium arsenate)



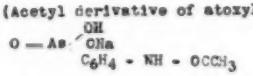
(4) Iron(ferric) cacodylate (Dimethyl ferric arsenate)



(5) Atoxyl (para-amido-phenyl-sodium arsenate) (sodium salt of arsanilic acid



(6) Arsacetin (Acetyl derivative of atoxyl)



### DEGREE OF ANEMIA BEFORE TREATMENT

In our experience, pulmonary tuberculosis does not cause a severe grade of anemia. The hemoglobin is relatively low as compared with the number of red blood-cells, thus giving a color index of less than 1. In the blood-examinations made before treatment, the lowest estimation of hemoglobin by the Sahli hemometer was 54 per cent., which was accompanied by a red-count of 3,904,000, giving a color-index of 0.69. The highest hemoglobin in this series was 94 per cent., with a red count of 5,472,000, a color index of 0.87. The average hemoglobin content for the twenty-eight cases was 81 per cent., the average red count was 4,904,428, with an average color index of 0.826. Of the twenty-eight counts, sixteen were 5,000,000 or more, while only three were

4. Cushny's Text-Book.

below 4,500,000. The rest were between 4,500,000 and 5,000,000.

In the leukocyte counts there was nothing especially noteworthy, for all being advanced cases, clinically, a slight increase in leukocytes was the rule, ten being 10,000 or more, the highest count reaching 15,400. In six cases the leukocytes were under 7,500, in one it was as low as 5,400, this being a case with very little moisture. In general, we may say that the patients with a large amount of moisture, i. e., with copious sputum and many moist râles in the lungs, showed an increase in leukocytes, the increase affecting the neutrophilic polymorphonuclear cells particularly, while the comparatively dry cases showed a normal or low leukocyte count, with the relative proportions normal, or a slight increase in the relative number of mononuclear cells present. This conforms, in a general way, with our ideas based on a much larger number of blood-examinations than we report here. For differential counting of the leukocytes we used the Ehrlich triple stain, fixing the smears by heat and counting always five hundred cells.

### EFFECTS OF THE TREATMENT ON THE BLOOD

Of the twenty-eight patients treated, there were two for whom we have no blood-count made after treatment, in one case because the patient had to be sent away as a matter of discipline, and in the other because the patient died suddenly from acute dilatation of the right heart (?). With these exceptions, we can give the record of the blood-examination after treatment.

After treatment, the highest count was 6,170,000, having gone up from 5,216,000. The highest hemoglobin was 96 per cent. (Sahli), which, being accompanied by a count of 5,664,000, gives a color index of 0.85. The average red count in the twenty-one cases which showed improvement in the blood was 5,355,857, as compared with the previous average for the entire twenty-eight of 4,904,428, which is also an average gain, for those twenty who gained, of 542,712. On the other hand, five patients lost in the number of red cells in the blood, all of the five being patients who did badly, except one, who had 5,376,000 at the start, showing an average loss of 319,000 cells per c.mm.

The hemoglobin changes were as follows: twenty-four patients gained in hemoglobin, the average gain being 8.46 per cent., with a maximum gain of 18 per cent. (cases 14 and 25). Two lost in hemoglobin, the average loss being 2.5 per cent., with a maximum loss of 3 per cent. Of the twenty-four who gained in hemoglobin, the average hemoglobin content after treatment was 88.54 per cent. With the average count of 5,355,857, we derive the color index of 0.835, as compared with the average color index of 0.826 before treatment. Thus the type of anemia, in so far as any anemia exists, is unchanged, the increase or improvement affecting the red-cell count and the hemoglobin in practically the same degree. However, we must remember that the number of patients who showed an increase in hemoglobin was twenty-four as against twenty-one who showed an increase in the red count. The improvement in hemoglobin seems, therefore, slightly more frequent in this series than does the increase in the red count.

As to the behavior of the leukocytes under treatment, in general, those counts which had been increased appear to be reduced toward the normal, and the lower counts seem to have been increased slightly. So many other factors affect the number of the leukocytes that we cannot include a full discussion of this feature at this time. Those patients who had shown considerable moisture and profuse expectoration also showed high leukocyte counts at first. As the moisture diminished and the sputum became less abundant, the leukocyte count seemed to diminish. This is not at all unlike the facts as they have appeared in patients not treated by special agents in our experience, and we cannot ascribe any significance to such changes as have appeared within this series, in so far as the leukocytes are concerned. As a matter of fact, of the twenty-six cases, in ten there was a diminution in the number of leukocytes after treatment, while in sixteen there was an increase. The greatest increase was 3,000 and the greatest decrease was 6,400 (Case 5). In differential counting there was nothing of special interest determined, as the relative proportions of the various types of leukocytes seemed still to be dependent on the presence or absence of secondary infection, bronchitis, etc.

We have not separated the cases of those patients who received iron from the cases of patients who had no iron, because there is little difference in the results in the two groups. If any distinction is made, we would say that the patients who had iron show a relatively greater increase in the hemoglobin content of the blood, while those who had no iron show a greater relative increase in the number of red cells present.

### WEIGHT OF PATIENTS BEFORE TREATMENT

In all patients treated, the weight before injections were begun was below that given as the average weight in previous good health, which we take as the standard and call "normal weight" for our patients. Three patients had been under treatment by the ordinary means for fourteen months and one had been under observation but one week before injections were begun. The average residence in the sanatorium before beginning the present treatment was 18.4 weeks. One patient was within a half pound of her normal weight and several were within five pounds of normal, but others were far below, one (2) being more than thirty pounds below his normal weight.

### EFFECTS OF TREATMENT ON THE WEIGHT

Each patient was weighed once a week, Tuesday morning, and the weight recorded on the special weight chart. Many of the patients had been a long time under observation before they were given special treatment, three as long as fourteen months, two for eleven months and others for shorter periods. In the first group of twenty cases, no patient had been in the sanatorium less than one month, and only three less than two months. In the second group of eight patients placed on the treatment, one man had been under observation but one week when he was given sodium cacodylate. Of all the twenty-eight, nine had lost in weight before the injections, with an average loss of 3.61 pounds, while eighteen had gained with an average of 4.36 pounds, and the weight of one had remained stationary since admission. We have tabulated the weights as they appeared at the end of each month of treatment, for the sake of brevity.

At the end of the first month, seven had lost (average loss, 1.93 pounds), and twenty had gained (average gain, 3.31 pounds). At the end of the second month, twenty-six were still under treatment, although two were not weighed, being too ill for that. Eight had lost (average loss, 1.84 pounds), and fourteen had gained (average gain, 2.50 pounds). This comparison is not with the weight on admission, it is a comparison with the weight at the end of the first month of treatment, showing the change occurring during the second month.

During the third month, twenty-one were treated; two were not weighed, four lost with an average loss of 1.18 pounds, and fourteen gained with an average gain of 2.69 pounds. In the fourth month, fifteen patients were treated; two were not weighed, five lost weight (average loss, 1.45 pounds), and eight gained (average gain, 2.06 pounds). A number were continued on treatment for a longer period, some as long as nine months, so that all are collected under one head as "at end of treatment," where a review of weight records for the twenty-six on whom we have such records show that nine lost in weight, with an average loss of 2.50 pounds, while seventeen gained in weight, with an average gain of 6.37 pounds. We emphasize that this is a good record for a class of patients all of whom are moderately or far advanced (Stage II or III—Turban). In all early cases the patients gain in weight without special treatment, a statement to which there is hardly an exception in the experience of this sanatorium.

TABLE 1.—EFFECTS OF TREATMENT ON WEIGHT*

| | Number of Patients | Number Who Lost | Average Loss (lbs.) | Number Who Gained | Average Gain (lbs.) | No. Who Did Not Change | Number Not Weighed | Number Dropped |
|---|---|---|---|---|---|---|---|---|
| Before treatment | 28 | 9 | 3.61 | 18 | 4.36 | 1 | . | . |
| First month of treatment. | 28 | 7 | 1.93 | 20 | 3.31 | . | 1 | . |
| Second month of treatment | 26 | 8 | 1.84 | 14 | 2.50 | 2 | 2 | 26 |
| Third month of treatment. | 21 | 4 | 1.18 | 14 | 2.69 | 1 | 2 | 7 |
| Fourth month of treatment | 15 | 5 | 1.45 | 8 | 2.06 | . | 2 | 13 |
| End of treatment | 28 | 9 | 2.50 | 17 | 6.37 | . | 2 | . |

* Maximum gain for one patient under treatment, 25 pounds (Case 20); treated eight months. Maximum loss for one patient under treatment, 5.75 pounds (Case 14); treated eight weeks.

The two patients "not weighed" were both far advanced and were confined to bed for months before death and both became extremely emaciated, although we had no means of getting exact records of weight for either patient. One (Case 2) had not only pulmonary disease but also involvement of the larynx, middle ear and small gut. The other patient was a young girl (Case 8) who had a slowly progressive caseous pneumonia and tuberculosis of the bowel (appendix and colon) who was kept in bed for more than eight months before her death.

The greatest gain in weight occurred in a patient who received the sodium cacodylate treatment (Case 20), while the greatest loss occurred in one who received the iron. The comparison is not a fair one, however, since the last patient had an enteritis of tuberculous origin.

| | Iron cacodylate | Sod. cacodylate | Arsacetin |
|---|---|---|---|
| Gained in weight | 7 | 5 | 5 |
| Lost in weight | 4 | 4 | 1 |
| Treated period. Weights record | 11 | 9 | 6 |

### EFFECTS OF TREATMENT ON THE STRENGTH, ETC.

We have no numerical system that will adequately express the results in this matter of strength. Impressions and the personal statement of patients must be cited for what they are worth. Almost without exception, the patients treated say they "feel better" and stronger while under treatment than they did before. Several have asked to be put on injections a second time, simply because they felt stronger while taking these drugs, although the condition of their blood has not demanded a second course. In no case have we noted any effect of poisoning such as is seen in arsenical treatment at times.

We do not believe there has been any direct effect on the temperature of patients from the drug injected, at least none directly attributable to the drug. One patient (Case 10) had continued for several months to show an elevation of temperature to about 99.5 F. each evening, and had suffered from a persistent diarrhea for nearly three months before he began to get sodium cacodylate. After he had received this drug for three weeks, he began to have occasional days when the temperature did not rise as before in the afternoon, and the diarrhea left him and has not returned, though that was nine months ago. In the great majority of our cases no demonstrable change has been observed, although a slight gradual decline in the evening elevation is seen in many cases, such as ordinarily occurs in a favorable individual who has been under sanatorium treatment a few weeks. Certainly, fever is not a contra-indication to this form of therapy.

In so far as the pulse is concerned, we have seen only such changes as are to be attributed to changes in the general condition of the patient. We have seen all of the same changes occur in similar cases who have had no such injections.

The examination of the sputum of our patients has not shown us any ground to believe in the sterilizing action or bactericidal power of either arsenic or iron, or a combination of the two, in the form or dosage here employed. The number of tubercle bacilli in the sputum of our patients showed no alteration other than we could expect from our past experience with untreated cases.

In some cases the patients have claimed to have an increased appetite and improved digestion after beginning the treatment. The fact that such claims have followed the first dose or the first two doses is in favor of an influence largely or purely psychic. We can say, on the other hand, that we have seen no digestive disturbance which we could attribute to the treatment by arsenic or by iron hypodermatically. This is not true of arsenic given in the form of Fowler's solution.

Two patients were suffering from troublesome skin lesions, eczematous in nature. These promptly and thoroughly cleared up after the arsenical preparations had been used but two or three weeks. The result was but incidental to the general treatment.

### SPECIAL INDICATIONS FOR ARSENIC OR IRON

In our experience of the past year, we have come to look on certain conditions as being indications for the use of these drugs hypodermatically:

1. When the body weight is below that which has been the average for the patient in previous good health.
2. When the blood shows an anemia, especially when the hemoglobin content is low. We see no reason for believing that the iron is superior to arsenic here, at least none other than the accepted theoretical grounds.
3. When the general strength is subnormal. Here we consider that the drugs act as "alteratives."
4. When, after the usual hygienic-dietetic treatment, improvement is slow or at a standstill.
5. Following a course of tuberculin, when the weight has fallen off, as it so commonly does with the increasing doses.
6. When some psychic stimulus is needed.
7. When there is reason to suspect the presence of syphilis. Here the cacodylate of sodium is to be preferred.

### CHOICE OF PREPARATION AND DOSAGE

The choice of the drug to be used will depend on the object in view. We would state our preferences thus:

Iron cacodylate is to be preferred:

1. When the hemoglobin content of the blood is relatively low, i. e., when the color-index is very low, say below 0.8. The dose of 0.03 gm. may be given twice or three times a week, changing the site of injection each time. There is apparently more direct stimulating effect derived from the iron solution than from the others.

2. When the patient is not neurotic and will not object to the pain accompanying the administration of the solution.

Sodium cacodylate is to be preferred:

1. When there is any suspicion of syphilis. In such cases we would use 1 c.c. of the 13 per cent. solution (0.13 gm.) three times a week, or at least twice a week.

2. When a painless solution is particularly desired. In such cases we would use 1 c.c. of the 5 per cent. solution (0.05 gm.) twice a week, as being safer than the stronger solution.

3. When there is some degree of secondary anemia, but with a color-index fairly high, as above 0.8.

Arsacetin is to be preferred:

1. When it is to be combined with tuberculin treatment.

2. When sodium cacodylate is not well tolerated.

In all cases we would use 2 c.c. of a 10 per cent. solution (0.2 gm.) and give that amount twice or three times a week, or even daily if it is desired.

### CONTRA-INDICATIONS

Although we have seen no harmful effect from the use of these drugs as described, we have avoided administration of them in certain cases:

1. During hemorrhage from the lungs. We have waited at least one week after the sputum has cleared up before resuming injections.

2. During the so-called "asthmatic" attacks of the patients with a great deal of chronic bronchitis and emphysema, fearing to irritate the mucous membranes during such seizures.

3. In all cases in which there was marked albuminuria and cylindruria.

4. Where there has been marked interference with the circulation.

### COMPARISON WITH PATIENTS NOT SO TREATED

The question arises: Have we done for these patients more than we could reasonably hope to accomplish for them by the use of the unassisted form of hygienic-dietetic treatment? If we have made the recovery of the later patients (Stages II and III) more probable, more rapid and more comfortable, then the special therapy has been useful. In order to get some light on this question, we have chosen from our records an equal number of similar patients (Stage II, 13, and Stage III, 15), and have studied the condition of their blood and of their weight in the same way as that followed for the others, though reported in briefer form.

The maximum weight gained by one individual, who was not given either iron or arsenic, was 45.75 pounds in a period of twelve months' residence in the sanatorium. The maximum loss of weight in the untreated group was 16 pounds in a period of eighteen months' residence. Both loss and gain, therefore, are in the excess of the loss and gain seen in patients under treatment by injections. Those patients who are treated seem less liable to go far beyond their previous average weight in health, and less liable to lose rapidly and extensively during the course of their illness. More detailed comparison of the separate items will be found in the following tabulated weights:

TABLE 2.—WEIGHT IN TWENTY-EIGHT PATIENTS WHO WERE NOT GIVEN IRON OR ARSENIC

| | Number of Patients | Number Who Lost* | Average Loss (lbs.) | Number Who Gained† | Average Gain (lbs.) | Number Not Changed | Number Not Weighed | Number Dropped |
|---|---|---|---|---|---|---|---|---|
| First month | 28 | 9 | 4. | 19 | 4.18 | . | . | . |
| Second month | 28 | 5 | 1.60 | 22 | 2.96 | 1 | . | . |
| Third month | 28 | 3 | 0.50 | 22 | 2.27 | 3 | . | . |
| Fourth month | 27 | 8 | 1.65 | 16 | 2.69 | 2 | 1 | 1 |
| End of residence | 28 | 10 | 7.62 | 18 | 12.87 | . | . | . |

* Average residence 10.95 months.
† Average residence 14.47 months.

### THE BLOOD IN TWENTY-EIGHT PATIENTS TREATED WITHOUT IRON OR ARSENIC

For the purpose of this discussion we shall take only the first blood-examination made after admission and the last before discharge. The entire twenty-eight cases are included. The general statements as to the type of anemia are true in all essential particulars when applied to this group, as well as when applied to the group treated. Being the same class of patients, i. e., in the same clinical condition, naturally the blood is about the same. On admission the lowest count (Case 24) was 3,190,000, with a reading of hemoglobin at 60 per cent., which gives a color-index of 0.96, a little higher than usual. The highest count on admission was 5,860,000, in which blood the hemoglobin was estimated at 75 per cent., a color-index of 0.64. The average count of the red cells for these patients on admission was 4,753,000, with an average hemoglobin content of 76.43 per cent., giving an average color-index of 0.81. On discharge the average red count was 4,641,071, with an average hemoglobin content of 79.5 per cent., giving a color-index of

TABLE 3.—TWO GROUPS COMPARED AS TO WEIGHT

| | Gained | | | | Lost | | | | No. Not Weighed | | No. Dropped | | Weighed Same | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. Treated | Average (lbs.) | Number Not Treated | Average (lbs.) | No. Treated | Average (lbs.) | Number Not Treated | Average (lbs.) | Treated | Not Treated | Treated | Not Treated | Treated | Not Treated |
| First month | 20 | 3.31 | 19 | 4.18 | 7 | 1.93 | 9 | 4.0 | 1 | . | . | . | . | . |
| Second month | 14 | 2.50 | 22 | 2.96 | 8 | 1.84 | 5 | 1.60 | . | . | . | . | . | . |
| Third month | 14 | 2.69 | 22 | 2.27 | 4 | 1.18 | 3 | 0.50 | . | . | . | . | 1 | 3 |
| Fourth month | 8 | 2.06 | 16 | 2.69 | 5 | 1.45 | 8 | 1.65 | . | 1 | 13 | 1 | . | 2 |
| End of residence | 17 | 6.37 | 18 | 12.87 | 9 | 2.50 | 10 | 7.62 | . | . | . | . | . | . |

0.85. Of the twenty-eight cases, fifteen showed an increase in the number of red cells, the average increase for the fifteen being 445,466; thirteen showed a decrease in red cells, the average decrease being 494,615. Comparing the counts on admission with those on discharge, for the twenty-eight we find that in spite of the fact that the number which gained is greater than the number which lost, there is a general average loss of 111,929. This is due to the fact that the individual losses were greater than the individual gains, for the maximum loss was 1,760,000, while the maximum gain was but 970,000 cells.

TABLE 4.—COMPARATIVE VIEW OF HEMOGLOBIN AND RED CELLS

| | Average of Red Cells | | Average Hemoglobin (per cent.) | |
|---|---|---|---|---|
| On admission— | | | | |
| Treated | 4,904,428 | | 81 | |
| Not treated | 4,753,000 | | 76.43 | |
| On discharge— | | | | |
| Treated | 5,346,000 | | 88.54 | |
| Not treated | 4,641,071 | | 79.5 | |
| Average gain— | | | | |
| Treated | 542,712 | (20) | 8.46 | (24) |
| Not treated | 445,466 | (16) | 11.66 | (12) |
| Average loss— | | | | |
| Treated | 319,000 | (5) | 2.5 | (2) |
| Not treated | 494,615 | (13) | 7.14 | (7) |

TABLE 5.—COMPARATIVE VIEW OF CLINICAL RESULTS

| | Treated 28 | | Untreated 28 | | Seventh Report 65 | | Sixth Report 66 | |
|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % |
| Apparently cured | 6 | 21.4 | 1 | 3.57 | 7 | 10.77 | 2 | 3 |
| Disease arrested | 10 | 35.7 | 5 | 17.85 | 5 | 7.69 | 8 | 12.1 |
| Improved | 6 | 21.4 | 11 | 39.28 | 26 | 40 | 28 | 42.4 |
| Progressed | 2 | 7.1 | 6 | 21.43 | 10 | 15.38 | 16 | 24.2 |
| Died | 4 | 14.3 | 5 | 17.85 | 5 | 7.69 | 5 | 7.6 |
| Not treated (ann. rep.) | . | .... | .. | ..... | 12 | 18.46 | 7 | 10.3 |

With the hemoglobin the result is somewhat different. On admission the average hemoglobin was 76.43 per cent., and on discharge, 79.5 per cent., showing an average gain for the twenty-eight of 3.07 per cent. hemoglobin. There were twelve cases showing gains, averaging 11.66 per cent., and seven cases showing a loss of hemoglobin averaging 7.14 per cent., and nine cases in which the hemoglobin content remained unchanged.

In the leukocytes the lowest count was 5,400, and the highest count was 19,900. The counts here correspond exactly with the statements made elsewhere regarding the significance of leukocytosis, and in respect to the type of cells which are actually and relatively increased in number.

On reviewing the results of these control cases, the clinical evidence in favor of the treatment is stronger and more certain than the detailed evidence obtained by the actual weights and blood-examinations. It will be noted that the number of apparent cures has been just as large as that obtained during the seventh year of the sanatorium, although that group contained 17.01 of Stage I, while the group here reported is made up entirely of Stages II and III, the number in whom the disease was arrested was also twice that (in percentage) of those found in the sixty-five cases of the seventh year. This is more than a coincidence, and is more satisfying than the voluminous details, since the future usefulness of the patient and the time of his discharge from the institution, together with almost every other practical consideration, is determined by the clinical condition rather than by any laboratory tests. Dr. Trudeau has well stated this important fact—that careful clinical observation is after all the safest guide we have in the treatment of our tuberculous patients. Dr. Knothe reports from the Hospital of Odessa, April of this year, on cases of tuberculosis treated with atoxyl, saying:

> The value of the arsenic has been ascribed in such treatment to the healing action of the arsenic on the improved blood condition and the nutrition of the organism. To me it appears that the arsenic has, besides this, an actual bactericidal action against the tubercle bacilli within the body. . . . The conclusions from the cases reported may be drawn as follows: Atoxyl exerts a curative action on the disease in question, an activity which, in isolated cases where there is a possibility of comparison, surpasses the activity of the ordinary cacodylate as well as tuberculin, and which not infrequently succeeds without influencing the nutrition of the body, and at times even where weight is lost. I hold to my assertion that the positive results of treatment are to be ascribed to specific bactericidal activity on the tubercle bacilli within the organism.

Our results do not confirm Dr. Knothe's views.

Dr. Peters' paper read at Denver this month concludes that hypodermic injections of iron are practically specific in the secondary anemia of tuberculosis. He considers the iron citrate the best suited in marked anemia, the metarsenate of sodium the best as a general tonic, arsenic and strychnin together to promote metabolism, and finally says that hypodermic injections of iron should always have a place in the treatment of tuberculosis.

## CONCLUSIONS

The following conclusions seem to us justifiable, at least in so far as our experience has taught us anything:

1. The subcutaneous or intramuscular injection of sterile solutions of arsenic or iron, or of the two in organic combination, is entirely practicable in the treatment of the tuberculous in sanatoriums.

2. The effects of such medication are seen chiefly in the changes in the blood and in the body weight.

3. The preparations of iron seem to affect the hemoglobin content more profoundly than it does the number of red blood-cells.

4. The preparations of sodium cacodylate and of atoxyl (arsacetin) seem to affect the number of red cells more markedly than the hemoglobin.

5. These solutions are in no sense specifics against the tubercle bacillus, but seem to exert a general tonic or alterative action within the organism.

6. The use of these preparations is entirely safe and is not attended with danger to the patient, even when continued over a period of many months.

7. Relatively larger doses are borne when given thus than are tolerated when given by the mouth.

8. The dosage is capable of exact control and the amount of the drug absorbed is known definitely.

9. The body weight is more rapidly and more certainly raised when these preparations are employed than when the unassisted hygienic-dietetic form of treatment is maintained.

10. There is no demonstrable increased liability to pulmonary hemorrhage accompanying the use of these preparations in pulmonary tuberculosis, even with advanced cases and in the presence of progressive destruction of the lung.

2329 South Figueroa Street.

## ABSTRACT OF DISCUSSION

DR. SAMUEL D. SWOPE, Deming, N. Mex.: We find in our part of the country that there is a very marked effect following the hypodermic use of these preparations of iron and arsenic. Many of the people who come to us are in a very low physical state and it is especially noteworthy that we get, as the result of this treatment, a very quick increase in their desire for food, and also in their ability to assimilate the principles thereof. So far as I know in my limited experience no tem-

perature reaction has followed the hypodermic injections of these preparations. There is the suggestion, however, that some of these effects might be due to the hypodermic injections. I find quite a few persons, especially those from the far east, who are very timid, not wishing the injections to be given in the gluteal region; for this reason the injections are often refused. I think that the nervous disturbances may have some effect on the febrile reaction. Dr. Bullock of Silver City, N. Mex., has had quite an extensive experience with this treatment. He reports very satisfactory results and his conclusions are very convincing.

DR. W. JARVIS BARLOW, Los Angeles: Toxic effects from the use of these preparations I have not seen. The reason is, I think, that I have not pushed the arsenic at all and I have kept the patients under treatment for a long period of time. I give these injections of arsenic twice a week; the arsenic is not pushed at all in the class of patients under discussion. I do not see the need of it. I get no rise in the temperature; any rise in the temperature can be attributed to other reasons. Dr. Swope spoke of the patients objecting to the injections being made in the gluteal region. I use the deltoid region and I have yet to find a patient who objected to the injections there. I see no objections to giving the injections in the gluteal region, except that more pain is produced there than in the deltoid region. Dr. Fulton has spoken of the use of these preparations in cases other than pulmonary tuberculosis. I repeatedly see cases that have been carefully watched and which could be compared with tuberculous cases in a similar condition. The results on the blood are not different from what can be obtained by the regular methods. The tonic effects following the injections of arsenic is considerable and are not obtained by me with the employment of other methods.

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# INTESTINAL APPROXIMATION

## A PRELIMINARY REPORT ON A NEW MECHANICAL DEVICE AND A NEW METHOD

JOSEPH B. BACON, M.D.
Surgeon to the St. Francis Hospital
MACOMB, ILL.

About six years ago I announced[1] a new mechanical device for intestinal approximation, called the dumb-bell, from its shape. I have been assured by many of the best American surgeons that the method was a good one, but they stated that the caliber of the dumb-bell used was too small for safety. Accepting this criticism as just, I have made a new instrument which incorporates all of the essential features of the dumb-bell, while I am enabled to increase its caliber by using thinner material. The perfect result of an operation, performed two months ago on a 30-pound pig, convinces me that I am justified in making a preliminary report.

This new device is a simple grooved ring, ⅜ inch wide, ¾ inch in diameter, made from thin sheet silver, with a forged groove ⅛ inch deep to hold the compressed tissue under a ligature.

The new method of operating and the new device here explained is the result of six years' work. I began with the idea that, in an end-to-end approximation of an intestine, all of the connective tissues must be incorporated in the fixation method in order to safeguard against leakage, and also to get a firm safe union, because it is a well-known fact that the sheath of fibrous submucous tissue is normally both air-tight and water-tight. After experimenting with one device after another, I finally succeeded in making a simple grooved ring (Fig. 1) to accomplish the desired result. It simply acts as a hollow cylinder for the passage of liquids and gas, and at the same time gives a base on which we can tie all the connective tissue in one firm grasp by means of a rubber and silk suture of coarse fiber, and thus have a firm union for three or four days while the serosa and muscularis are becoming united by an organized lymph. In from three to four days the organized tissue is a safe barrier against leakage. The ligature necroses through the connective tissue by this time and frees the device.

The ring is made of thin silver and is very light. There are three different sizes, one for children, one for adults and one for the colon in adults. The same method may be used with a grooved ring moulded from rubber or from any digestible material, but I prefer one of silver, as it can be made small, is light, has a definite strength so that one can do a definite work and know what to expect during a definite time.

We desire the connective tissue to hold at least for three days and prefer it to hold for five days. My experiments on pigs prove that the dumb-bell was freed after from four to six days. The silk ligature should be firmly wrapped around the tissues and the ring twice, then securely tied with several knots; over this should be applied a very light rubber band. The knots and ligatures are left within the canal and the quantity of ligature can make no difference. The ligature material should be coarse, so that it will necrose through slowly, hence heavy braided silk should be used.

Fig. 1.—Ring used for intestinal approximation.

Fig. 2.—Traction sutures grasped by forceps A and B.

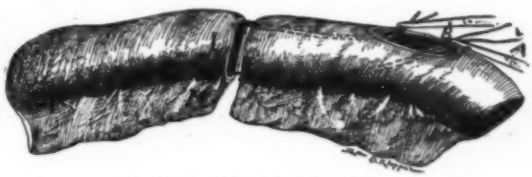



Fig. 3.—The traction sutures in place.

### OPERATION FROM END-TO-END APPROXIMATION

The ends of the bowel are secured by a suture at the mesenteric border, care being taken to include in this suture V-shaped mesenteric triangles. Directly opposite the mesentery, on the periphery of the intestine, another suture is placed. Each of these sutures is tied loosely, as they are used only for the purpose of invaginating

1. Bacon, Joseph B.: THE JOURNAL A. M. A., Jan. 6, 1906, p. 21.

the two ends of the bowels. Four inches from the proximal end of the intestine, along its peripheral border, an incision is made through the intestinal wall, one inch in length. A pair of forceps is now passed through this incision and into the end of the intestine and the tension sutures secured and drawn through the incision. Now steadying the mesenteric border of the intestine between thumb and finger and drawing the sutures, invaginates the two ends of the intestine into each other and through the incision. The ring is now placed into the ends of the invaginated intestine, being held by special forceps, and the ligature applied at a distance of one-half inch from the ends of severed intestine, encircling it and fitting into the groove of the ring. The operator disinvaginates by gentle traction and pressure on forceps, reunites the peripheral incision with a Cushing suture, then completes the operation by suturing the mesenteric opening. The three sizes of the ring can by the ligature method be made to fulfil any requirement in any operation for intestinal approximation.

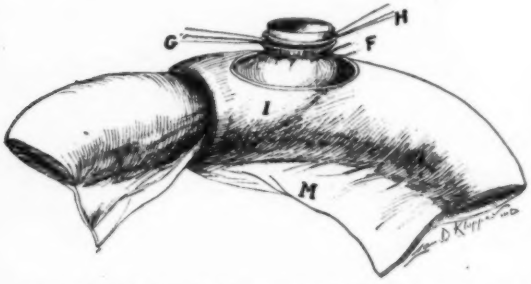



Fig. 4.—Invagination of the two ends of the intestines. G and H indicate the ends of the invaginated intestines; F, rubber ligature.

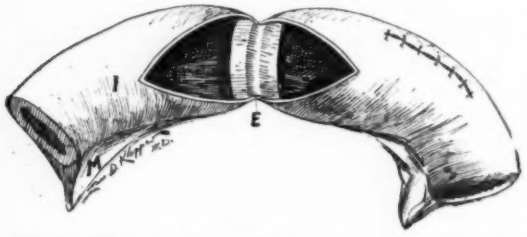



Fig. 5.—Diagramatic representation of ring (E) in place after the ends of the intestine have been disinvaginated.

The advantages of this method of operating are:

1. Simplicity of the construction of the ring; therefore, always ready.
2. Simplicity of the operation.
3. The absolute safeguard against leakage, as the ligature secures all of the connective tissue.
4. The short time in which the operation can be performed.
5. The fact that the ring cannot remain in the site of the operation more than four or six days, as the connective tissue will all have been uniformly necrosed by that time.
6. The fact that the extremely light weight of the ring, its size and shape insure against the possibility of its lodging at any part of the alimentary tract and its large caliber permits the free passage of feces.
7. The fact that no reinforced sutures are necessary.
8. The minimum amount of cicatricial tissue that ultimately remains.

## UNIVERSAL GRAVITY OUTFIT

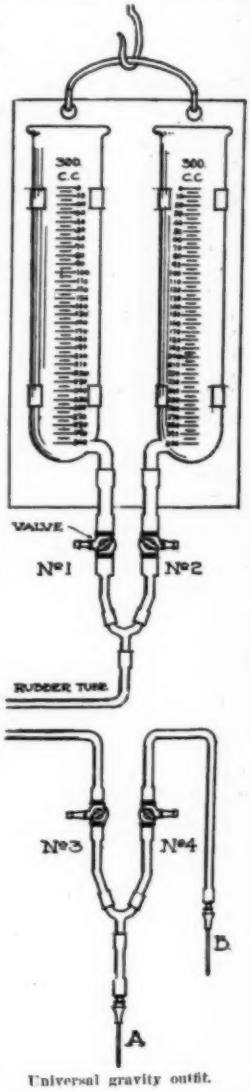
W. T. MEFFORD, M.D.
CHICAGO

I have found the outfit here described useful for so many conditions that I wish to bring it to the attention of the profession. It can be used for the following purposes:

The treatment of abscesses by the closed method, as recommended by Sir A. E. Wright; the treatment of hydrocele; irrigation of the bladder; proctoclysis; the intravenous administration of salt solution, defibrinated blood, salvarsan, and other medicines; the subcutaneous administration of salt solution, and for direct intravenous transfusion.

The technic for treating an abscess by the closed method is as follows:

All stop-cocks are closed and the containers filled, one with an irrigating fluid, and the other with the medicated solution to be used. Stop-cocks 1 and 3 are then turned on and the rubber tubing from the container holding the irrigating solution is allowed to fill. Stop-cock 3 is then turned off. The skin where the needle is to enter should now be cleansed, the needle passed through an alcohol flame and the abscess punctured. Turn on the off-flow (Stop-cock 3); Stop-cock 4 is then turned on, the abscess drained, and Stop-cock 4 is again turned off. Stop-cock 3 is now turned on and the cavity filled with the irrigating fluid. When the cavity is sufficiently filled, Stop-cock 3 should be turned off, and Stop-cock 4 turned on, allowing the irrigating fluid to drain away. This procedure may be repeated as frequently as conditions require. After cleansing with the irrigating solution one can, if so desired, turn on any special medicated solution by turning off Stop-cocks 1 and 4, and turning on Stop-cocks 2 and 3, supplying the solution from the container holding such medicine. After filling the cavity with the medicated solution, any part of this solution may be drained away by turning off Stop-cock 3, and turning on Stop-cock 4.




Universal gravity outfit.

The same directions apply to the treatment of hydrocele, and to the irrigation of the bladder, except that the catheter should be used instead of the needle; and for proctoclysis, using the rectal tube instead of the needle.

The technic for the intravenous administration of salt solution, defibrinated blood, salvarsan, etc., is as follows:

First sterilize the outfit and all materials to be used, filtering all solutions through sterile filter paper into the containers. Observe the containers carefully and see that there are no

small particles floating in the fluid; if so, again filter the solution. Have solutions at a temperature of 100 F. Remove Stop-cock 3 and connect the needle which is to be inserted into the vein directly with the rubber tubing from the containers. Tie a constrictor around the patient's arm to distend the vein at the elbow. If the vein is not sufficiently distended, a few backward and forward motions of the forearm will distend it more. Cleanse the skin over the vein at the elbow with alcohol. Have the needle thoroughly clean, and just before inserting pass it through an alcohol flame. Turn on Stop-cock 1, filling the rubber tubing from the container holding the physiologic salt solution; turn off Stop-cock 1 and insert the needle into the vein. Untie the constrictor, and turn on Stop-cock 1 from the salt solution. When a sufficient amount of salt solution has entered the vein, Stop-cock 1 is again turned off, the needle withdrawn while pressure is made over the vein where the needle enters the skin.

The same technic will apply to the administration of salvarsan and other medicines, except that when the needle is first introduced into the vein the physiologic salt solution should be turned on to see that the needle is in the vein. The needle being properly in the vein, turn off Stop-cock 1, and turn on Stop-cock 2 from the vessel containing the medicine. After the desired amount of the remedy has been introduced, Stop-cock 2 should be turned off and Stop-cock 1 from the salt solution turned on, in order to wash away traces of the remedy that may be left at the point where the vein was punctured. When the vein is sufficiently cleansed by the physiologic salt solution, Stop-cock 1 is turned off and the needle withdrawn as directed above.

For the direct transfusion of blood, the arm of the patient who is to receive the blood, as well as that of the donor, is prepared as directed above for salt transfusion and a constrictor placed above the elbow of each individual. The needles should be thoroughly cleaned by passing them through an alcohol flame just before inserting into the veins. Stop-cocks 1, 3 and 4 are opened, filling the rubber tubing with physiologic salt solution at 38 C. (100 F.). Stop-cocks 3 and 4 are turned off, sterilized needle A inserted into the vein of the individual who is to receive the blood and the rubber constrictor untied. Stop-cock 3 from the salt solution container is turned on to see that the needle is properly in the vein. This having been ascertained, the salt solution is permitted to flow slowly while puncturing the vein of the donor with Needle B. As Needle B enters the vein, Stop-cock 4 is turned on, and Stop-cock 3 is turned off. The constrictor above the elbow of the donor should not be untied until the desired amount of blood has been transfused. After having taken the required amount of blood, the constrictor on the arm of the donor is untied, the needle is withdrawn first from the arm of the recipient in the manner described above, and then the needle is removed from the donor in the same way.

To avoid a hematoma, pressure should be made for a short time over the point where the needle entered the vein. The punctures should be covered with a small collodion dressing.

2139 West Madison Street.

**Ancient Surgery.**—Surgery is as old as the needs of mankind and its written record extends into the dim past, long before the Alexandrian conquest. It is a disputed theme which one of the two Aryan branches first employed it, but there is evidence that the Hindus possessed a high degree of medical and surgical knowledge, that they performed many plastic operations, among which was rhinoplasty. They also practiced lithotomy quite extensively. Their surgeons removed tumors, did amputations, understood and treated the different varieties of hernias, especially the omental hernia, which was removed by operation on the scrotum. They performed laparotomies, opening the abdomen for intestinal concretions and obstructions. In these cases the incision was made a little toward the left middle line; Cesarean section was also performed, as well as cephalotripsy. Ophthalmology was well advanced and cataract operations were done.—A. M. Crispin in *New York Medical Journal.*

# THE INSTITUTIONAL CARE OF YOUNG INFANTS *

THOMAS S. SOUTHWORTH, M.D.
NEW YORK

A recent writer on "The Proper Management of Foundlings and Neglected Infants,"[1] has gone so far as to indicate his belief that the institutional method must give way entirely to the system of placing out in families. He says:

> The first step would be entirely away from institutional care, as the improved feeding-methods and personal hygiene have not had the favorable results expected while the infants are collected and retained in large numbers in one domicile. These old and futile efforts have been long and faithfully tried, and it is time that some other plans be instituted, if the mortality among this class of infants is to be materially reduced.

That the older methods in institutions for foundlings and young infants were productive of a shocking mortality among those under one year of age, has been acknowledged the world over. Nevertheless, reasons existed and still exist for the retention of the institution in some modified form. While some institutions to-day continue to pursue fatalistically the older methods, it must be admitted that others have made marked strides and are presenting very enviable results. But my conviction is that only a beginning has been made, and that far better results can be obtained. The purpose of this paper is, therefore, to call attention to the opportunities and obligations of institutions which receive and care for infants.

## FACTORS IN INSTITUTIONAL MORTALITY

The factors which enter into the large mortality in foundling asylums and institutions are as follows:

1. Delay in transmission of the infants to the institution, with resulting disturbance of vital functions and of digestion.
2. Questionable initial care on entering the institution.
3. No wet-nurses, or too few wet-nurses, for premature and delicate babies.
4. Bottle-feeding from birth, or sudden weaning on reception in the institution.
5. Inadequate facilities (milk laboratories or diet kitchens) for preparing bottle-feedings.
6. Routine artificial feeding, with but slight individualization.
7. Insufficient nursing force, which precludes the normal personal attention to each infant.
8. Large wards with ready extension of infectious and contagious principles.
9. Overcrowding, with lack of air-space and of proper ventilation.
10. Insufficient provision for outdoor airings.
11. Inadequate facilities for the application of quarantine, in its broadest sense, to all sources of infection in infancy.

It may be remarked that I have given no prominent place to the requirement of clean milk and of methods intended both to keep it sweet and to limit bacterial growth. This is necessarily included in the proper preparation of artificial feedings, and its importance has been unduly exaggerated and attention thereby diverted from other measures of equal if not greater urgency.

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Chapin, Henry Dwight: Med. Rec., New York, Feb. 18, 1911.

Such degree of success as has been attained by the institutions which now show the more enviable records has come to them in proportion to their recognition of the adverse factors which I have enumerated.

To put this reorganization of institutions for infants on a logical basis, we must not be content with the correction of isolated errors; we must go far enough back to discover the fundamental reasons for their abnormal mortalities. In this search, we may start from the premise that as a rule the lowest mortality obtains where infants receive not only the mother's breast-milk, but also her personal care in the home. It matters little how primitive the home, if there be competent breast-milk and individual care, the prospects of survival for an infant, healthy at birth, are excellent. Remove one of these factors, and the risk is greatly increased. We have daily cause to recognize this added risk when artificial feeding must be resorted to, even in a home where there is maternal care. Deprive the infant both of breast-feeding and of home care, and at once the outlook becomes an exceedingly serious one.

While institutional environment undoubtedly contributes its own special dangers, it is generally recognized that when breast-fed or bottle-fed infants in an institution are accompanied by their mothers, they do relatively better than infants correspondingly fed who have no maternal attention. Such success as the placing-out system has obtained is dependent in very considerable part on restoring to the infant individualized care in the substitute home. Therefore, since breast-milk and motherly care in the home are the foremost factors in preventing early mortality, and experience has shown us that possibly either one of the two, but never both, can be dispensed with without incurring the greatest risk, it follows that just in proportion to the ability of the modern institution to furnish these to infants will be its success in preventing their deaths and rearing them as normal well-nourished children.

Nevertheless, it is just these two factors which are most lacking in the majority of institutions, and until they are supplied more adequately, it cannot be claimed that the limits of success in the institutional care of infants have been reached.

We may now return to the consideration of the special factors which call for readjustment.

*Transfer to the Institution.*—The institutional life of an infant is usually preceded by some period of stress in the home from which it comes. This may be due to the illegitimate birth of the infant, the death of the mother, her serious illness, or merely to the mental anxiety associated with increasing poverty or the breaking up of the home. These instances will suffice to indicate that the infant, whether breast-fed or bottle-fed, has usually suffered more than ordinary deprivation and neglect. Then follows the transportation of the infant, often unsuitably clothed, to the institution. Possibly the first application is made with the infant at the police station, the office of some charitable organization or some general hospital. This may involve long waits or another journey. If the baby is taken in at some temporary receiving station, misguided sympathy gives the infant some unsuitable milk mixture to still its cries. Eventually it reaches the institution, suffering from unwonted exposure to heat or cold, fatigued, and probably with a disturbed digestion. In short, infants on reaching the institution are so rarely in normal condition that I recall one institution in which it was the routine practice to enter the condition of all such infants as "hopeless," in order to avoid criticism in the event of their later demise. The partial solution of this problem should lie in better arrangements at all charitable centers and receiving stations for prompt attention to such infants, and for immediate transfer to their proper destination.

*Reception and Attention at the Institution.*—When the child is received into the ward, the probable previous experiences should be borne in mind. If it has been exposed to cold, it should be given a warm bath to restore the circulation, enveloped in warm clothing and placed in a warm bed. Every institution receiving such infants should be equipped with suitable appliances for maintaining the temperature of feeble and exhausted infants when this is below normal. Premature infants are especially vulnerable. The incubator has gone out of fashion. It easily got out of order, and fresh air was rarely supplied in sufficient quantity. Its place has been taken by enveloping suits of cotton-wool and cheese-cloth, and by padded baskets in which the body heat is maintained by hot-water bottles, or—much better—by electric heating pads. A "warm room," in which abundant fresh air is heated uniformly to 80 F. or thereabouts, will in time come to be a necessity in every well-appointed institution for infants.

*Nourishment.*—The nourishment of the infant following its reception is a matter of great importance. Bearing in mind its previous experiences, this is a moment for caution. If the child has been previously breast-fed, this is a particularly inauspicious time for beginning total artificial feeding. If the infant has been fed artificially, in an ignorant or haphazard fashion, the digestion is probably more than ordinarily disturbed. Rest and fluid in the form of boiled water are more advisable than food, unless this be very simple—barley water or whey. Exact information as to the infant's previous food is rarely obtainable. A mild laxative to clear the digestive tract of the injudicious offerings of solicitous friends or strangers is a wise preliminary to the beginning of a cautious line of feeding.

*Temporary Wet-Nursing.*—For many of these infants, temporary wet-nursing should be provided. No other measure offers an equal chance of restoring digestive balance. While the sudden weaning which takes place on the transfer of an infant to the hospital is so often the beginning of a more or less prolonged period of malnutrition ending in death, wet-nursing for a few days will permit the gradual introduction of bottle feeding, and is not only more rational, but more frequently attended with success. Whatever may be said of the ethics of wet-nursing in private practice whereby the life of the wet-nurse's child is often sacrificed in order to save that of the foster-child, wet-nursing in the institution has neither this drawback nor is it impracticable. It is simply a question of dollars and cents.

Breast-milk is purchasable. Institutions which undertake to confine and shelter prospective mothers without pay should very properly exact an agreement that the women will nurse another baby besides their own, as a partial return for what they themselves receive. Homeless mothers can be found who are glad to accept the shelter of the hospital while earning something for the future, through the sale of part of their breast-milk. Circumstances should determine the manner of payment. Exceptionally willing nurses may be paid a lump sum per month. For others, the transaction should be on the strictly commercial basis of so much per ounce for the breast-milk furnished. This plan, followed at the Säug-

lingsheim at Dresden and elsewhere, at once assures the cooperation of the wet-nurse. She is more ready to confine herself to a proper milk-making diet, since the larger flow of milk is to her advantage. The quantity taken from the breast is easily determined by weighing the baby before and after nursing. It is stipulated at the start that she is to nurse any baby assigned to her. To ensure this being done, milk, when drawn from the breast and fed from the bottle, is paid for at a somewhat lower rate.

By furnishing temporary wet-nursing, it is possible for the institution to compensate its infant inmates at crucial junctures for the serious loss of maternal nursing.

*Artificial Feeding.*—Even with a reasonable provision for wet-nursing, the majority of infants in any institution must be fed artificially. This is far from being a simple matter. It is generally admitted by all who have had any experience in this direction that it is much easier to feed artificially a group of infants who are cared for in their homes, even though the homes be poor ones, than to feed successfully a similar group in an institution ward. Furthermore, if institution infants are fed on condensed milk, simple dilutions of cow's milk with sugar and water, or even with a few inelastic percentage formulas of what is commonly called "modified milk," a considerable proportion of the results will be unsatisfactory, and the deaths, especially among very young infants, numerous. Every institution should possess a supply of clean cow's milk, and a milk laboratory or kitchen thoroughly equipped and sufficiently elastic to permit of individualization of the infants in their feeding, and the employment, as required, of every modern scientific aid. Only with such aids, backed by experience in their application, can the mortality of artificially fed infants in institution or hospital wards be reduced to a reasonable minimum. Such a milk laboratory and its maintenance cost money, but it is well expended for the results are to be measured in human lives.

Even with these facilities conscientiously applied, however, there are certain infants who, from failure to absorb their carefully adjusted food, or frequently also as the result of intercurrent disease, lose steadily in weight. Under such circumstances, in private practice the resort is to a wet-nurse with a reasonable prospect of staying the decline and reestablishing normal digestion and absorption. The institution or hospital infant has a right to similar treatment before it is deemed hopeless and condemned to die on a regimen which has already proved inefficacious. Wet-nurses employed by the institution have here another important field of usefulness. It is not necessary that such wet-nursing should be continued indefinitely. When, with gain in weight and restored digestive functions, the infant has been lifted out of the danger zone, artificial feeding may be resumed. This is at first partial, enabling the wet-nurse to give more of her milk to other needy infants, and in time it is made total. A few nursings a day often enable an infant to assimilate more successfully the bottle-feedings which furnish the most of its nourishment.

We have now pointed out the lines along which the institution may progress in compensating infants for the loss of maternal nursing, and may turn to the ways in which the loss of individual care and protection in the home may be more properly compensated.

*Large Wards.*—Unquestionably, the building of the large wards which prevail almost universally in hospitals and institutions had its origin in the desire to care for the largest possible number of patients, with the aid of the smallest possible number of nurses or attendants. While the evils of this policy can, where adults are concerned, be largely overcome by increase of the nursing staff, the noxious influences of the large ward on children are too numerous and too insidious to be met solely by such measures. The late Mark Twain said that in the home "one baby was a riot, twins an insurrection, and triplets a full-blown revolution." The average mother or nurse in the home would be considered in danger of overwork in giving proper care to three infants. Many institution wards, however, are constructed to house from sixteen to twenty-four infants, while during the day three attendants, of varying degrees of experience, and one at night, would be considered a liberal provision, even when the ward contained a number of sick infants. Such disproportion, even if it allows for the more necessary services, certainly precludes any of the refinements of motherly solicitude, which, in some indefinable way, aid in keeping a baby in good condition.

*Overcrowding.*—Aside from the lessened attention given each infant, the overcrowding of wards has unquestionably a deleterious effect on young infants. Because infants are small and their cribs small, they are often allowed less air-space than the adult. Just the reverse of this should obtain. Oxidation is much greater during the normal rapid growth of infancy. Free ventilation is therefore imperative. This calls for properly screened windows open at all seasons both day and night. Fresh and not overheated air, now demanded in the treatment of disease, has no less place in the welfare of infants (not premature) who are nominally well. Even with careful attention to ventilation, it is a common experience to find that when a certain number in each ward is overstepped, all the bottle-fed infants begin to do less well.

Probably the greatest menace to the infant in the large ward is infection. The element of added risk, when the infant leaves the comparative seclusion of its own home and enters the populous ward, is scarcely computable. Suffice it to say that the chance of infection is multiplied by the number of other inmates in the ward, since, with a few exceptions, the infections to which it is liable come most commonly from other children, and not from adults.

In speaking of infections and contagions, it is natural that we think first of those popularly associated with infancy and childhood. Scarlet fever and mumps play less part among the very young. Diphtheria is somewhat better controlled than formerly, through antitoxin immunization, but repeatedly breaks out in unexpected places through the agency, probably, of unrecognized bacillus carriers. The exclusion of specific vaginitis calls for constant vigilance. Whooping-cough and measles spread easily, defy ordinary formal quarantine, and cause, both directly and indirectly, many deaths. Illnesses which are regarded lightly in the home assume a more serious import when they occur in a ward of bottle-fed infants who are with difficulty maintaining their weights or even making moderately satisfactory gains. Chicken-pox stops gains and claims some victims among the feeble. Thrush ("sprue") is a serious and often fatal disease in such a group, costing marasmic infants a pound or more of weight, a loss which many cannot survive.

This by no means completes the list of dangerous infections. I am inclined to the belief that two other

groups of infections actually cost more lives in institutions having large wards. I refer to the communicable infections of the gastro-intestinal tract which predominate in the summer months, and the communicable diseases of the respiratory tract, which occur chiefly, but not exclusively, in the winter months. Whatever improvement there may have been in other directions, little attention has thus far been paid to isolation, quarantine and other preventive measures for these conditions. There is growing evidence that ward epidemics of intestinal disturbance of varying degrees of severity travel from patient to patient, or arise from common causes not traceable to the milk. Ward epidemics of nasopharyngeal disease are easily recognizable, carrying in their train otitis media, pneumonia and cervical abscess. Isolation in its broader application is not only not practiced, but cases of pneumonia, frankly infectious, are rarely removed from the general wards in which they appear, unless it be for treatment by cold air or in special medical wards. It may be claimed that it is practically impossible to isolate all cases of potential infection in our institutions. If, however, it be really impossible to take measures for the limitation of avoidable illness, the main fault lies with the construction and arrangement of the building. If infections of all kinds are to be limited at the outset, the large ward with many inmates must go.

The construction of new institutions and hospitals for infants must therefore include, primarily, smaller wards, preferably containing four, but not more than six beds. Each ward should have its own toilet and bathing-room, and a smaller room opening out of it, in which any patient showing doubtful symptoms may be placed by the nurse. Each ward should also have a section of veranda on which the infants may be placed in lined and padded baskets on all favorable days. The influence of such outdoor airings on the health, color, digestion and growth of infants has been demonstrated. Each ward should have its own semipermanent nurse or nurses. A more intimate relation will thus be established between the nurse and her charges, a more definite responsibility felt for their welfare, and an honorable pride and rivalry in their progress will be stimulated. With such arrangements, the composite element of "hospitalism" should be largely eliminated. If infants and young children of different ages are assigned to each small ward, conditions will more nearly approximate the home and more personal attention will be secured for the infants. Where training-schools for nursery-maids exist, the training acquired will fit them more suitably than at present to meet their responsibilities when they enter private service.

I am no opponent of the placing-out system, but until we recognize the fundamental defects of the older types of institutions, and cutting loose from tradition and error, rectify them, calling nothing impossible or impracticable until it has been tested under favorable conditions, we certainly are not justified in saying that the institutional care of infants is a failure. The future institution, built and organized to avoid present-day mistakes, should, in view of the showing made by the best of the old-type institutions, attain a proportionately greater measure of success. Then, as now, the most favorable results will be secured, not by the abandonment of either, but from organized cooperation of both systems.

807 Madison Avenue.

## ABSTRACT OF DISCUSSION

DR. GUSTAVUS ELIOT, New Haven, Conn.: The most wonderful cures I have known of in children ill with digestive and diarrheal troubles in summer have followed the carrying of children from the city to the country. This leads me to emphasize the point that such institutions for the care of children should be removed from the city and erected in the country. The buildings should not be the elegant three- or four-story buildings such as are often seen in the cities, but they should be low buildings so constructed that after a few years' use they may be destroyed and clean new buildings take their place. The location of such an institution in the country also gives an opportunity for improvement in the treatment of these children in regard to their food. They are fed to a great extent on cows' milk, and if in the country, they can receive milk that is absolutely fresh and clean. In the feeding of these children, fresh milk twice a day should be used instead of the milk that is now used, which is twenty-four to forty-eight hours old when it reaches the consumer. These two things, country air and fresh, clean milk, are most important factors in the treatment of infants deprived of a mother's care.

DR. J. W. COKENOWER, Des Moines, Iowa: In twenty years' work in the Iowa Children's Home, in the admission of babies, much trouble has been caused us because we could not get a complete history. We have found that in nearly all such institutions nine times out of ten the infectious and contagious diseases have arisen from receiving diseased patients. This we have partially overcome. One must look after the excretions and secretions and deal with them in any way that will bring the best results. After that is done, no routine method will fill the bill. Individual cases require individual feeding. We use barley water, and sometimes have employed prepared foods and malted milk, but it is the exception and not the rule when we have been able to use them advantageously. But cows' milk has been our chief dependence and we try to keep that absolutely clean, and have much better results. Often we have children brought to us in such a condition that we are unable to do good work. The stomach absolutely refuses to retain anything, either food or medicine, and there is such a generally relaxed condition that we cannot give it by the rectum; then as a last resort we have used quinin and olive oil, making an inunction and wrapping them in cotton and oiled silk. In that way we feed and medicate them until we have given the digestive organs a rest and can feed them otherwise, and in this way have saved several children that I believe we would otherwise have lost.

DR. LANGLEY PORTER, San Francisco: I think no one could have presented a more forcible argument against institutions than Dr. Southworth in the paper he has just read. I believe that twenty years from to-day no one in this Section of the American Medical Association will make a plea for the retention of the institution. In San Francisco we have persuaded the Children's Agency of the Associated Charities to do away with their foundling asylum and to board out the children, with the result that the death-rate has been reduced from 40 to less than 2 per cent. But the care of the babies in the institutions is really a very small part of the question. The real problem is to educate the public in caring for children. When a baby is boarded out, the result is that the older children in the family are being trained to the proper care of children, and that is the first and greatest advantage in the boarding-out system. A second advantage is the decrease in the death-rate that always follows. The boarding-out system is of economic value, also, for the reason that in the fixed charges of such an institution, as Dr. Southworth has described, we tie up a large amount of money and also pay out much money to people for the care of these children. If you were to divide this money among the many needy families, allowing them to care for these children, you would get better value for the money than if it were tied up in capital. I believe that before many years have passed Dr. Southworth will be as ready to condemn institutions as any of us.

DR. I. A. ABT, Chicago: I agree for the most part with the last speaker, though I think it will be many years before we can abolish infant hospitals and asylums. Some place must

be provided where we can send babies that are destitute and require immediate care. I think the infants' asylum or hospital is valuable just in proportion to what is put into it. It is of value just in proportion to the amount of soul and brains put into it. If you want results you must have a technic that provides for asepsis and cleanliness, good food and good care. This must be carried out with determination, and in the end you will save a goodly proportion of your children. In boarding-out cases, the result depends very largely on the character of the women who receive the patients. I have seen both ways tried. In the boarding-out system very often it is a mercenary matter with the women who take the babies. So far as wet-nurses are concerned, it has been said that an infants' hospital has no more right to exist without the wet-nurse than the adults' hospital without an operating room. I think that is true. If you desire to reduce the infant mortality, wet-nurses are absolutely necessary, especially in the summer when the mortality is high. In our own hospital in Chicago we have as many wet-nurses as we need. We found we could train these women to produce large quantities of milk. They milk the breasts and produce several quarts per day. As to the prevention of infection I think very often our technic needs to be perfected. It seems to me we are not careful enough about our hands, and sometimes the nurses infect a child. It all comes to this, that we must educate the educators, particularly physicians and nurses. Mothers and nurses should be taught how easy it is to carry infection from one child to another; not only vulvovaginitis, but a host of other diseases. Each baby ought to have its own individual property, its own toilet articles, its own powder box, even its own thermometer. Another important thing is the feeding of children when they first come to the hospital. I think we have gone too far in the matter of starvation of babies. I think that when a baby is brought in pinched, blue and cold and is given barley water for a prolonged period his weight-curve goes down and if he does not actually starve, at least he falls a ready victim to infection. I believe that starvation is an important element not only in causing the immediate death of the infant but indirectly predisposes to death from infection. Another matter of importance is the question of cathartics. I am convinced that many of these babies are physicked sick. If they have had a cathartic on admission and the intestinal tract is clean, what is the sense in giving them continued carthartics? I think the matter of starvation and the matter of over-catharsis should be emphasized, because at present they are often applied in a routine way without due reference to the condition of the patient.

DR. T. C. MCCLEAVE, Berkeley, Cal.: Dr. Porter omitted to mention a very important feature of the work in San Francisco. This work was undertaken about two years ago. The mortality under the old system was about 40 per cent. and during the first year under the boarding-out system it dropped to 20 per cent. Then, an organization in the city making it possible for these children to be given certified milk, the mortality dropped in the second year to what it now is, about 2 per cent. Dr. Southworth spoke of clean milk. I think the meaning of that word "clean" is not always clear. In the feeding of infants and also of adults sick with various diseases, we know the wonderful change that results from putting the individual on certified milk. Therefore I want to urge on you particularly that you turn more and more to the use of certified milk. We have in California a strong organization of milk commissions, and we have a constantly increasing demand for certified milk. We are engaged in a vigorous propaganda among the laity for certified milk, as well as among the profession, but it is unfortunately true that it is often easier to get a response from the layman than from the physician.

DR. JESSIE MCGAVIN, Portland, Ore.: I do think that one of the most important things is to see that the nurse carries out the physician's orders. It means a constant looking after the nurses until they are thoroughly trained, and when the nurse once understands that you are a crank, and that your orders must be carried out, you will save more of your babies. I lost one baby by neglect on the part of the nurse in the matter of feeding. In regard to contagious cases, in one instance I found a contagious hospital and a general hospital adjoining and the place simply swarming with flies. We need to educate the hospitals in these conditions. As to pure milk, in Portland we have had one epidemic with a very high mortality as a result of dirty milk. All physicians were losing cases. We have had a fight for pure milk and as a result our mortality is lessened.

DR. T. S. SOUTHWORTH, New York: Perhaps in some sections of the country the boarding-out system can be employed exclusively, but as I see conditions in the East it will be impossible for a long time to come. The sectarian organizations will be loth to give up their institutions. We still have a considerable field for improvement in our institutions and what I have said applies also largely to babies' hospitals. I recently saw a statement to the effect that being a baby should be classed as an extra hazardous occupation, and it is very true. I did not refer to the glass partitions, for such partitions are valuable just so far as you can depend on your nurses. The glass partition is merely a danger sign board. Speaking of food, we have certainly need of milk which is clean. However, we must not only have suitable milk, but it must be used in the right way. There has been too much talk in this country about the saving of life by pasteurization alone. As to the limitation of infections, reference has been made to the danger of the patient's bringing in infectious diseases on admission. I admit this is a serious matter, but a great deal of infection is introduced into the institution by the visits of parents or relatives. The outbreaks of the ordinary infectious diseases in the wards are directly proportionate to the number of friends allowed to come to see the children. Often a parent will come directly from the bed-side of a child sick with scarlet fever or other infectious disease.

## INFLUENCE OF SUMMER HEAT ON DIARRHEAL DISEASES *

I. A. ABT, M.D.
CHICAGO

A first glance at infant-mortality tables demonstrates the fact that the greatest death-rate occurs from the gastro-intestinal diseases during summer. Dr. W. D. Booker, in the presidential address before the American Pediatric Society in 1901, reviewed the early literature on this subject. Dr. Booker says that the records show that in about the middle of the eighteenth century there occurred along the Atlantic coast of North America a serious disease characterized especially by vomiting and diarrhea and was confined almost exclusively to children in the first two years of life. Its incidence was limited almost to the summer months and it appeared each year in an epidemic form, with such regularity that it was looked for as an annual visitor. In 1777, Benjamin Rush read a paper entitled "An Inquiry Into the Cause and Care of Cholera Infantum." He gave a description of the stools, etiology and treatment of the disease. He denied the etiologic importance of dentition, worms and summer fruits, and he thought that the disease was similar to cholera and remitting fever in adults. He did not attempt to explain any relation of the disease to atmospheric heat, but contented himself by saying that the disease seldom occurred in Philadelphia until the middle of June and generally continued until the middle of September, and that its intensity and duration were always proportionate to the heat of the weather. The first indication for treatment, he thought, was to evacuate the stomach by emetics, followed by an abundance of water or tea, or an infusion of blueberries. He also suggested enemas, plasters to the abdomen, and

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

internally he recommended port wine or white wine. The best results were obtained when a little water was mixed with the wine. He considered baths very important, and he said his principal dependence had been placed for many years on country air. As prophylactic treatment he recommended, (1) a daily cold bath, (2) clothing which was appropriate to the conditions of the weather, (3) removal of the children from the city to the country. Rush says: "I have never known but one instance of a child being affected with this disease, who has been carried into the country in order to avoid it."

It was thought at this time that the disease was peculiar to America as, apparently, the condition had not been described in other countries. It was thought to be due to the character of our climate, to the severity, frequency and suddenness of the change of temperature and to the sudden transition from winter to summer without the intervention of a gradually opening spring.

The mode of action of atmospheric heat in causing cholera infantum was the subject of controversy and various theories were advanced in explanation of it. These were for the most part based on the prevailing conception of the existence of a cutaneo-hepatic sympathy. By some, the heat of summer was supposed to exhaust the tone of the skin or to disturb its healthy action and thus determine an undue quantity of blood into the abdominal viscera, causing a congestion of these organs. Booker goes on to say that others thought that the effect of protracted heat led to a disturbance of the digestive organs because of some deranged condition of the exterior surface of the body. In this way the tone and energy of the stomach became impaired and consequently the system became more accessible to impressions exercised by external agents and its resistance to them became diminished.

So far as the geographical distribution of the disease is concerned, it is noted that in the extreme north or south, the sick-rate and the death-rate are low. In North America, the middle and western states contribute the largest numbers in the mortality figures. As one approaches Canada, the numbers diminish; in the South and Southwest, we are told, the disease is less common. It is rare in the tropics, as has been observed in Brazil and in the tropical and subtropical regions of Asia and Africa. The same points in vital statistics apply to European countries. The summer diarrheal diseases occur most frequently in the large centers of population, particularly the industrial centers and in those regions where artificial feeding is commonly employed, and where the climatic conditions are such that the summers are relatively hot and the winters cold and severe.

The older American physicians, particularly Rush, thought that the hot weather was the most important factor in the etiology. He advised taking the child from the city to the country. In the course of time, other writers thought that the hot weather alone was an insufficient cause. Some said that the summer diarrhea of infants was a species of Asiatic cholera; others, that it was a form of malaria. In America, some writers considered it akin to yellow fever and others thought it was due to an indefinite miasm. Virchow thought that the condition stood in some relation to the water-supply and drainage, or to the surface water, adopting the view Pettenkofer applied to typhoid fever. In short, the older views as to the etiology of summer cholera considered that the disease was due to exogenous agents, the action of which was favored by the external heat, the latter acting either directly or through the food.

When the bacteriologic era began the attempt was made to find specific microorganisms. Escherich differentiated an exogenous infection of the intestines, the so-called streptococcus enteritis, and an endogenous infection, a process which ran its course as an autoinfection, or an infection of the chyme. Escherich thought that the disease might be produced by infected cow's milk, microorganisms gaining access to the milk shortly after milking, or that endogenous decomposition occurred as the result of already sick or enfeebled children receiving such milk. In the intestinal canal, irritating organic acids were believed to be produced, or alkaloidal products, ptomains, which produced diarrhea and nervous symptoms. No specific microorganism was found, but various forms, he thought, were capable of producing such a reaction. Other authors described epidemics of summer diarrhea, particularly in hospitals and asylums, and naturally thought that the epidemics were bacterial in origin. Baginsky, who failed to find a specific microorganism, came to the conclusion that the saprophytic bacteria in the milk were capable of producing poisonous peptones from the proteids. He thought that indol, phenol and ammonia gained access to the lymph and blood and produced toxemia. It is a well-known fact that bacteria multiply rapidly in milk during hot weather and it was thought that this was the sole cause. This led to sterilization and pasteurization of milk. Flugge and all the other authors who have described the poisonous effects of milk in producing summer cholera have compared this condition to meat-poisoning. But this comparison does not hold in all details. Meat-poisoning and sausage-poisoning affect all persons, whether they be children or adults, who have partaken of this food. It might be said that children are more susceptible than adults, though as a rule not all children who partake of supposedly infected milk fall ill. On the other hand, Vaughn has described epidemics of poisoning by ice-cream and cheese, affecting every person who partook of the food. They fell severely ill with vomiting, diarrhea, pain, weak, irregular pulse and great pallor or cyanosis. He isolated a poisonous substance which he called tyrotoxicon. No further argument need be advanced that the summer complaint is not similar to tyrotoxicon poisoning.

Czerny and Kellar believe that summer diarrheas are for the most part the result of exogenous fat-decomposition due to the presence of bacteria; they think that this condition is related to the heat of the summer only in so far as the increased number of microorganisms are rendered more active. But there are numerous objections to this theory. If it is true that bacterially acidified milk is toxic, why is buttermilk devoid of toxicity and why so acceptable, even to the sick infant?

In brief, it may be said:

1. The bacterial toxicity of milk is not proved.

2. On the other hand, a bacteria-laden milk is more likely to produce diarrhea than milk poor in bacteria.

3. In those cases in which a toxic product has been isolated from milk or meat, nearly all persons who took such food were rendered severely ill. An analogy of this condition with summer diarrhea is not tenable.

4. It is very probable that bacteria play a part in summer diarrhea, but they do not act on the milk before it is taken into the body (exogenous), but more likely cause fermentation after the food has been received in the gastro-intestinal tract (endogenous).

The bacterial explanation for the summer diarrhea is not sufficient. Why the excessively high mortality only

during the hot weather? How may we explain the fact that the hotter the summer, the greater is the sick-rate and the death-rate among infants?

If during a hot day one examines the conditions under which the infants live in homes of the poor, one will be impressed by the fact that the temperature indoors exceeds the temperature outdoors; that at night, if the temperature outdoors has fallen considerably, the temperature indoors is considerably higher. The babies are frequently put to bed overclothed and sometimes excessively covered with bedding. If the infant's temperature be taken even before diarrhea has set in, he is frequently found to have 100 to 101 F. Many writers have looked on this condition as one of insolation or heat-stroke.

The interesting fact has been brought out that seven times as many artificially fed children, as breast-fed, die in summer. The bottle-baby is at greater peril in summer than at any other period of the year. No matter what theory may be advanced, the fact that breast-fed children show greater resistance and immunity than bottle-fed children cannot be denied. Those infants who have previously suffered from gastro-intestinal derangement, or even those who are convalescing from some alimentary disorder, are likely to show a hyperthermia on the advent of hot weather. This is undoubtedly due to the fact that the heat-regulating mechanism is much more unstable in children suffering from digestive disorders, and we may say that such children are predisposed to heat-stroke.

It is not possible to say in what manner the heat affects the body of the child, but it seems that the infant's resistance is lowered and that injuries by food are readily produced. It is not known whether the heat produces changes in the enzymes of the digestive tube, or whether the bacteria make toxic products or irritating acids in the gastro-intestinal tract. It is possible that the epithelium of the gastro-intestinal tract is itself damaged. It would be unscientific to say that bacterially decomposed milk has no causal part in producing summer diarrhea; but on the other hand, proof is insufficient to permit us to say that bacteria play the single rôle. It would seem that the increased heat, particularly of the home, is an important etiologic factor. Whether this be due directly to heat-stroke or whether it be, in the sense of Finkelstein, a diminished tolerance for food and the possibility of injury by food, must remain for the present an open question.

Perhaps this latter point will explain the difference in death-rate between breast-fed and hand-fed infants. The tolerance for breast-milk is always greater than the tolerance for cow's milk, and similarly, immunity and resistance is greater in breast-fed than hand-fed children. A word should be said against the practice of keeping sick infants warmly dressed and excessively covered during the hot weather. A cool bath and the out-of-doors temperature are important indications in treatment.

The occurrence of high sick-rate and death-rate during the summer cannot be explained by a single cause. We believe that the condition is due to a combination of causes. Infected milk has a deleterious influence, but it must be considered along with the direct influence of heat, especially the excessive warmth of the home. It would be unwise to deprecate the advantage of sanitary milk, but the problems of hygienic housing, the avoidance of overclothing, the importance of taking the child out of doors and of frequent bathing are important points which cannot be overestimated in consideration of the summer diarrheal diseases of infants.

Finkelstein, after discussing the bacterial theory of summer diarrhea, thinks that infection occurs in those cases in which the gastro-intestinal cells have been previously damaged. He is willing to admit that delicate children who ingest bacteria-laden milk are liable to have gastro-intestinal infection or that damage may be produced by preformed acids and peptones in the milk. The two arguments in favor of infected or decomposed milk as cause of gastro-intestinal disorders were: the increased morbidity and mortality during the summer, and the fact that the greatest proportion of those that sickened and died were bottle-fed infants, while breast-fed children were for the most part immune. But Finkelstein thinks this insufficient. He thinks that the majority of infants who sicken or die during summer time are injured by the heat. The cases begin acutely, show symptoms of hyperpyrexia and the trouble may be cured or even prevented by reduction of the patient's temperature or by providing cool, sanitary living conditions. The heat lowers the individual tolerance of the infant and predisposes him to gastro-intestinal disorders which are likely to assume great severity.

If it is asked why breast-fed children enjoy immunity against the injuries produced by excessive heat, it may be answered that the child suffering from digestive disturbances has less resistance to heat than a normal child, since most breast-fed children are well, and a goodly number of hand-fed children are more or less ill, the conclusion is obvious.

4326 Vincennes Avenue.

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## ABSTRACT OF DISCUSSION

**DR. JOHN W. FOSS, Phoenix, Ariz.:** In Phoenix we have probably the highest dry-bulb temperature and the lowest wet-bulb temperature during the summer, of any place in the world. We have no acute dysentery in children in the summer. We consider the summer the healthiest season for children. In fact, we have very little sickness of any kind among children at that time. So I think this question of heat is practically eliminated as the cause of this class of diseases in children, judging from the experience we have had in our climate. There are few places which have less physical discomfort from heat during the summer than Phoenix. As an illustration of this fact, 15 per cent. of humidity with the thermometer at 106 F. at Phoenix is as comfortable as 70 is at Chicago ordinarily, or the dry-bulb thermometer would have to register 133 at Phoenix to cause as much discomfort as 90 per cent. of humidity with the thermometer registering 98 F. at Chicago. It is probably this remarkable climatic condition which is so conducive to the health of children. Our experience would seem to prove that the mere question of heat has nothing to do with these diseases, especially at Phoenix. The wet-bulb rarely goes above 72 F. in Phoenix in the summer time, while the dry-bulb will sometimes run as high as 110. Evaporation and radiation are very rapid here on account of the pure dry air, moderate wind velocity and varying atmospheric pressure.

**DR. M. A. WEEMS, Columbia, Tex.:** I think this question can be explained by the humidity. In Arizona at the time the air is so dry the evaporation from the body of the child is so rapid that it keeps the body temperature low even in extremely hot weather.

**DR. W. V. C. FRANCIS, Los Angeles:** I think one factor in the etiology of summer diarrheas is very obvious, in that the condition occurs in large cities. In Los Angeles we have none of the really poor and none of the overcrowding that you have who live in large cities. I believe a large factor in the diarrheas of children is the lack of fresh air. If you remove the slum districts and the overcrowding, you will do away with a lot of the summer diarrheas and deaths.

**DR. FRANK P. GENGENBACH, Denver:** Undoubtedly there are many factors to be considered in the cause of summer diarrheas in children, but I am inclined to believe with Dr. Abt

that heat does have something to do with it. Recently we had an early and sudden hot spell for Denver, and in my own private practice I saw distinct disturbances among the babies. This is an instance in which the ideas of Dr. Francis do not apply, for these babies were in well-to-do families, well provided for, well cared for, and had plenty of fresh air. I think that some depressive factor in connection with this hot spell certainly did disturb the babies. Probably in hot weather the babies cannot stand as rich a food, as high in fat, and it disagrees with them. Often it is not necessary to take them off the food, but if I take off the cream and give skim-milk mixtures they rapidly improve.

DR. FRANCES M. ALLEN, San Diego, Cal.: In my experience of six years in Illinois in a children's institution, the children were cared for by mothers who boarded the children for $2.50 or $3.00 a week each, and our results showed that we could keep our mortality low, except during the hot spells. During five years we had a high mortality only during August, during the sixth year, in July.

DR. L. T. ROYSTER, Norfolk, Va.: To me this is one of the most interesting and difficult phases of the diarrhea question. I come from the Atlantic coast, where the humidity is high, and where a temperature of 88 F. is very uncomfortable, while a temperature of 100 F. out here I have not found at all uncomfortable. In April the temperature rises considerably; then during the first two weeks of May we have a considerably cooler spell, and then the temperature shoots up and the minute the temperature goes up the trouble begins. I can almost predict the number of my calls by the reports of the weather bureau. In June we have a high death-rate. In July and August we have a decreased mortality, so I believe the humidity must have something to do with it. Another interesting fact is this: I have practically no consultations in summer diarrheas from the country. Yet there the temperature is just as great and the humidity is just as great; but I practically never see a child from two miles out with a summer diarrhea. Again, I practically never see a case among breast-fed infants. If a sick child is brought to me in the morning and it is taken for a boat ride for the day, it will come back in the evening 95 per cent. better. In fact, we have tried to train the mothers to take the children to the sanitarium when they first become sick, without waiting to see a physician, even, and it is really surprising how rapidly they improve, even though the institution is located but 50 yards from the shore. Another thing is the character of the discharges. These vary from year to year. One year there will be a watery discharge with the same prostration and again the next year we may have a remarkable number of dysenteric discharges, so that from year to year the discharges are markedly different.

DR. I. A. ABT, Chicago: I think the fact has been brought out by investigators, even as far back as the time of Benjamin Rush, that summer diarrheas are more prevalent in the temperate regions, while further south and even in the tropics, the disease is scarcely known. In my own part of the country there is a striking relationship, I am sure, between the condition of the weather and the summer diarrhea. I think anybody who has lived east of the Mississippi River will not doubt that. Why New Orleans should have a low death-rate with an increase of temperature I confess that at this moment I am unable to see. I am not sure that the heat is the only factor, but it does seem that all over the world where cases are being studied and where men are trying to solve this problem, during July and August there is the highest death-rate. It is true the condition is more common in the cities than in the country, but the condition is not confined to the cities by any means. I brought up this question because it seems to me we ought to study the cause of these summer diarrheas. The war that is being waged all over the world to save babies needs some help from the educator. We urge that every effort be made to save babies and I think it is very important that we attempt to arrive at some definite conclusion as to the cause of trouble. I would suggest that a committee be appointed from the various communities and that this committee be asked to keep a record of their observations and that they submit a report based on such records.

## TWIN PREGNANCY IN UTERUS BICORNIS

PHELPS G. HURFORD, M.D.
ST. LOUIS

In view of the rarity of pregnancy in the uterus bicornis, with viable fetus, I think the following case of sufficient interest to report. The patient was referred to me by Dr. George M. Tuttle.

*History.*—Mrs. E. B. C., a cultivated American woman, aged 34, was seen by me in March, 1911. She was then about four months pregnant and very uncomfortable, having pain much of the time from what appeared to be uterine contractions, also much pain due to attacks of acute indigestion. The bladder was very irritable and for about three months she had had to get up three or four times at night to urinate.

The patient had one child living, a girl 5 years old, in perfect health; this child was born prematurely at eight months and had thriven from birth. One other baby had been born prematurely at about seven and a half months and had lived seventeen months, dying of some intestinal infection. With each former pregnancy, Mrs. C. had had similar pain and discomfort, and all efforts to prevent premature labor failed.

*Examination.*—The patient was apparently in good general condition but somewhat nervous over the prospect in store for her. She was about four months pregnant. The fetal movements could not be felt; the heart-beat could not be heard. There was unquestionably a notch in the upper middle portion of the uterus, but no importance was attached to this finding. A mass could be made out on either side. It was now learned that, whereas in previous pregnancies there had been movements and contraction pains only on the right side, they were now present on both. The urine was examined repeatedly and was at all times normal.

With careful dietary and some medication the patient went along more or less uncomfortably (mostly more) for two months. She was up for a time every day but went out very little. Later examinations convinced me that there was something radically out of the way in this case. Movements and heart-beat could be readily made out on the right side but never on the left; the separate masses could be easily distinguished. June 3, the threatened miscarriage became imminent; sedatives had no effect. True labor pains began and on my second visit dilatation was well advanced. After the patient had progressed favorably through the night, the pains unaccountably stopped early in the morning. Dilatation was then complete and the membranes were ruptured. It was now found that the umbilical cord was through the pelvic inlet and the head beside and above it was not engaged. The cord was pulsating and the child and the mother were in good condition; as yet it could not be certainly demonstrated that twins were present. Dr. Tuttle saw the patient at this time and thought twins a strong probability. Although it was probable that interference would be necessary it was decided to wait a while longer.

*Delivery.*—That evening artificial delivery was performed under chloroform anesthesia. Dr. H. J. Storrs was called in consultation and agreed to the necessity. He suggested the possibility of a twin pregnancy in a bicornuate uterus. Version was performed and one living and one dead child delivered. A septum divided the uterus to a point well below the umbilicus and a fetus occupied each side; both were vertex presentations. The placenta of the dead child showed the site of the hemorrhage that had provoked the miscarriage. The uterus contracted promptly and then showed two separate fundi, each larger than the fist, and separated by a notch so deep that the clenched fist easily rested in it—a typical uterus bicornis. There was no appreciable difference in the size of the two horns.

*Recovery.*—Convalescence was uneventful, the patient sitting up on the eighth day. Involution proceeded normally, and after two months a vaginal examination showed clearly the two cornua, each about the size of the normal fundus and separated from each other enough to allow the two examining fingers between them. The notch extended nearly to the supravaginal portion of the cervix.

346 North Boyle.

# CIRCULAR BLADE, HOLLOW AND GUARDED CHISELS

## ADVANTAGES OF THEIR USE IN MAKING BONE-FLAPS

D. MILTON GREENE, M.D.
DETROIT

When performing operations on the skull and antrums, I have for years been impressed with the fact that when a bone-flap is to be formed and replaced, with the expectation of its preservation and ultimate reuniting, as in the "Beck frontal antrum operation," it is highly important that its periosteum be not detached, because the bone, as is well known, derives its nutrition largely from it. This is especially true in operations in presence of pus or infection, for the bone-flap must under such circumstances have more and better nourishment, and more perfect coaptation than would be necessary under aseptic conditions, in order to preserve its vitality, and insure its integrity and ultimate reunion.

Should the periosteum become detached from the bone-flap in performing the Beck operation, necrosis would follow, necessitating removal of the bone, which would cause scarring and depression deformity, and would be a great calamity to both the patient and the surgeon; this is true of any operation for the formation of a bone-flap, where its preservation is essential. Detachment of the periosteum is usually caused by splintering the bone in cutting it with chisels. The splinters and fractures which occur in bone-flaps, made by chisels, are always due to the wedge shape of the chisels used. When a wedge-

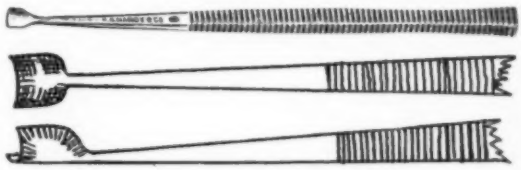
Figs. 1 and 2.—Two circular blade chisels.

shaped chisel is driven into bone, the "chip" or part so cut has to rise or be displaced to make room for the bit or blade of the chisel, and is thereby split or fractured at the junction of the incision and the uncut bone, just in proportion to the thickness of the chisel at that point. Every time the chisel is driven into the bone, it splits or fractures it in the manner above stated, so that when the bone-flap is completed, there will be a series of splits or fractures around its edge, with consequent separation of a portion of its periosteum, with a liability of complete separation of the bone-flap from its periosteal covering.

I have devised a set of chisels which overcome in a large degree the difficulties mentioned, and which are useful in many operations on the skull and antrums, especially in forming bone-flaps and in operations within the nose. They are so constructed that they may be driven into the bone without producing any fracture. These chisels are new in design and original in the philosophy of their use and effect. There are five chisels in the set: two circular blade chisels (Figs. 1 and 2) one hollow chisel not unlike a "square shovel" (Figs. 3, 4 and 5), one guarded chisel with straight bit, and one guarded chisel curved on the flat.

They may be described as follows: They are six inches in length, with formed, milled handles; two are made with circular blades, beveled on both sides or surfaces, so that they will cut in every direction, except where the handles join the blades; one is made with a blade 7 mm. and the other 8 mm. in diameter, and about 1 mm. thick at the junction of the handles with the blades. They are so constructed that when driven into bone, the only place the incised bone has to yield is at the center of the blade, and there only 1 mm., while at the circumference (at the edges of the incision), where the incision joins the uncut bone there is no displacement, and, therefore, no splintering or fracture takes place.

The third chisel of the set is called a "hollow square blade chisel," and is not unlike a square shovel in form (Figs. 3, 4 and 5). The blade has a curve of about one-fourth of a circle, is sharp in every direction, and has



Figs. 3, 4 and 5.—Hollow chisel not unlike a square shovel, beveled from center to all edges, leaving the thickest part at handle and in the center. Side view and front view.

the same cutting effect the circle blades have. This chisel is used in cutting a circular flap in any operation, and may be used in removing turbinates, septal shelves, spurs, and in opening into the antrum of Highmore.

The other chisels of the set are called guarded chisels: they are made with handles the same as the others, ending with flat blades, 7 mm. wide, 1 mm. thick and 3 cm. long. The cutting edge is beveled from both sides in the center, making edge 4 mm. wide, and concave, with a guard at each corner, which is 1 mm. square, 2 mm. long and rounded (blunt) at the end. These act as guides as well as guards. One has a straight blade (Fig. 6), while the other is curved on the flat (Fig. 7); the latter is designed especially to be inserted beneath the bone-flap in the Beck frontal antrum operation, to cut the partition or bony septum of the antrum. The guards guide the chisel, and cause it to follow the bony septum, no matter how crooked it may run. These chisels may also be used in removing turbinates and septal shelves, and for various operations where guards or guides are needed.

There is one precaution necessary in using these chisels: The force necessary to drive them through bone

Fig. 6.—Straight guarded chisel.

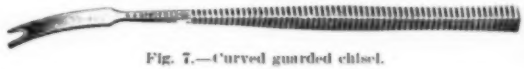


Fig. 7.—Curved guarded chisel.

is much less than that required in using ordinary chisels, because the resistance is reduced to a minimum, therefore, great care should be used that they are not driven beyond the point desired.

712 Jefferson Avenue.

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**Economic Importance of Health.**—If the citizen is diseased, his usefulness is curtailed; if as a result of disease he is maimed, crippled or blinded, he often becomes a burden to the community; if his life is thereby cut short, his services are ended. Has anyone ever calculated the economic loss to the country that might be materially reduced by giving the same attention to the preservation of the human species as is given to animals?—White in *Journal of the South Carolina Medical Association.*

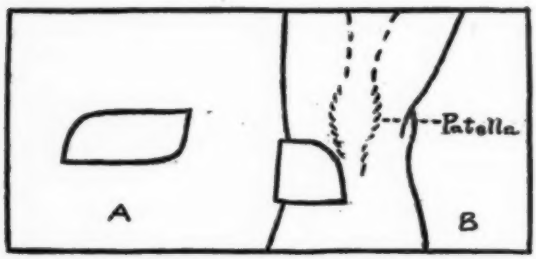
## TREATMENT FOR SLIP-MENISCUS

GEORGE CHANDLER, M.D.
KINGSTON, N. Y.

Slip-meniscus, or dislocation of the internal semilunar cartilage of the knee-joint, I have found to be of very frequent occurrence, and more often in females than in males. Standing on one foot solidly, as when on a step-ladder or chair, and making a quick move or inward rotation is the most common cause of loosening the cartilage. The internal condyle of the femur pressing against the cartilage, by this quick motion, displaces it inward, moving it on the upper surface of the tibia and thereby rupturing the coronary ligaments. It rarely comes from a fall or from slipping. The quick rotation would not displace the cartilage if the foot were not placed solidly on the ground and the weight of the body all on that leg. The symptoms are pain in the joint, quite severe, made more so by the complete extension of the leg, comparative ease when the leg is in semiflexed position and marked tenderness on pressure over the cartilage itself. There is usually very little swelling, though it may occur.

The following treatment I have been using for the past ten years with very marked success, and I have described it to other physicians, who tell me that their results are also very satisfactory.

For these cases I always have in my office several pieces of sole leather, cut, approximately, to the shape




Treatment of slip-meniscus; A, sole leather cut for application; B, leather applied to the knee.

shown in the illustration at A, about 4 inches long by 1¾ inches wide. I fit this leather to the inner aspect of the knee-joint as indicated at B. By first putting the leather in water, soaking it thoroughly and whittling the edges so that it is smooth, it may be molded into shape. I then strap this piece in position over the cartilage by adhesive straps, two up and down, one horizontally and one oblique, making four in all; then a firm, though not too tight, bandage of the coat-of-mail type is applied over the knee. If the bandage is voluminous, it need not be put on tightly, as it will give splendid support without shutting off the blood-supply.

I allow the patients to walk the same as usual, though they complain of some pain or rather soreness, which wears away in three or four days: I have them report in ten days when I reapply the same leather under a fresh bandage. After about three such treatments, the patients are well and only a bandage needs to be applied. I think the irritation of the leather which supports the cartilage in its natural position causes an aseptic adhesive inflammation to take place between the cartilage and bone; this takes the place of the ruptured coronary ligaments.

The advantages of this treatment are, its simplicity, its efficacy and the fact that patients can continue at their occupations while undergoing it. In fact, it removes all the attendant inconveniences of this painful condition and places it, to my mind, in the same category with a sprained ankle, when the latter is treated by the modern method of adhesive straps and walking.

11 East Chestnut Street.

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## SUCCESSFUL USE OF THE STAPHYLOCOCCUS SPRAY ON DIPHTHERIA CARRIERS

S. R. CATLIN, M.D., L. O. SCOTT, M.D.,
AND D. W. DAY, S.M., M.D.
ROCKFORD, ILL.

Early in January, 1911, an epidemic of diphtheria broke out in Rockford Hospital. With the appearance of the first case, all ordinary precautions of isolation, giving of antitoxin, etc., were employed.

The appearance of a second case made it evident that infection might be general throughout the institution, and we were appointed a committee in charge with power to institute any measures necessary to prevent an epidemic. Antitoxin was administered to all known contacts, and daily routine cultures from the throats of all inmates were made and examined. A quarantine for clinical cases was established in a separate building, and an isolation ward for carriers in another.

While no patients at any time developed the disease, within about two weeks from the appearance of our first case, a total of twelve clinical cases had developed among the nurses. Of these twelve, eight had received, from four to ten days previously, immunizing doses of from 1,000 to 2,000 units of Illinois State Board of Health antitoxin.

Five hundred cultures were taken during the epidemic from a total of seventy individuals. As a result of these routine cultures, twenty-two persons were found to have the diphtheria organisms in their throats without manifesting clinical evidence of the disease. In other words, out of a population of seventy people, 17 per cent. developed diphtheria, and 31 per cent. became carriers. As stated above, these carriers were isolated in a separate building. Release from isolation or quarantine was only granted after at least three negative cultures.

During the early stage of the epidemic, the ordinary methods of throat antisepsis were used, such as spraying with liquor antisepticus and 50 per cent. alcohol. In spite of all methods, certain individuals remained carriers for days. Two clinical cases that had been released from quarantine after three consecutive negative cultures were again found to harbor the diphtheria bacillus. Two persons were released and reisolated three and four times, respectively. Our most persistent carriers, however, were nurses who at no time gave clinical symptoms. In some instances it was found that nose cultures were positive when throat cultures were negative.

At about the height of the epidemic, Prof. Norman MacLeod Harris, of the University of Chicago, was invited to go over the situation with the committee. He verified without exception all culture findings that had been made. He recommended the use of a spray of broth culture of *Staphylococcus pyogenes aureus* as a means of ridding the throats of the diphtheria organism; a method first introduced by the Danish physician,

Schiotz,[1] and later successfully tested by Page[2] of Manila.

There was opportunity to test this method in eight cases, all carriers. A twenty-four-hour old bouillon culture was sprayed into the nose and throat two or three times daily, all other treatment being stopped. In no instance did any harmful condition develop as a result of the introduction of the staphylococci.[3]

Two nurses, previously persistent carriers for days in spite of all antiseptic measures, failed to give one positive diphtheria culture after the first application of the staphylococcus spray. Three nurses, each having had one positive culture previous to the use of the spray, were constantly negative thereafter. One nurse had one positive culture after using the spray, and one other had three positive cultures after employment of the spray, and then became negative. The eighth nurse was persistently positive in spite of, as supposed, the daily use of the spray; but it was later discovered that she had evaded using it as directed; more careful control of her use of the spray immediately cleared her throat of all diphtheria organisms.

### CONCLUSIONS

1. The ordinary immunizing dose of diphtheria antitoxin does not always protect an exposed individual against the disease.
2. Only by regular and constant taking of cultures can institutional epidemics of diphtheria be controlled.
3. The usual methods of throat antisepsis are of little value in ridding the throat of diphtheria bacilli.
4. Treatment of the nose is as important as treatment of the throat.
5. In institutional epidemics, more than one series of three negative cultures is necessary for release.
6. Results with *Staphylococcus aureus* spray were such as to warrant recommending its further use.
7. Apparently no harm results from the application of the spray.

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## THE TRANSFUSION OF BLOOD

### FURTHER NOTES ON A NEW METHOD *

ARTHUR H. CURTIS, M.D., AND V. C. DAVID, M.D.
CHICAGO

In a previous paper[4] was presented a detailed preliminary report on a new method for the transfusion of blood. At that time we expressed the opinion that the accepted methods of transfusion then in vogue were not adapted to general use and were not highly satisfactory even in the hands of those skilled in surgical technic and experienced in blood-vessel surgery. Evidence that others shared this opinion is afforded by a survey of recent literature, which contains numerous descriptions of ingenious devices contrived for the purpose of making this important operation one which can be performed by any competent surgeon. Especially deserving of mention, in addition to the well-known cannula of Crile, are the devices of Brewer and Leggett,[5] of Janeway[6] and of Sorese,[7] all of whom have given valuable reports of their studies in this field.

A more extended experience with our method of transfusion has resulted in the introduction of certain modifications in the technic, without radical alteration of the original procedure as previously described. The apparatus (see illustration) consists of a large glass bulb with two cannula tips, and a rubber tube with a glass syringe attached. The glass bulb is sterilized by the dry method and the inner surface coated with paraffin. The paraffin coat is best applied by pouring hot paraffin into the open end and then rotating the bulb to secure a uniform coat. The two cannula tips are then heated and each in turn dipped into melted paraffin and shaken to make a thorough coating so as to keep the excess from occluding the lumen. The syringe and rubber tube are prepared by boiling.

With the apparatus now ready for use a one-half-inch incision is made over the most prominent vein of the elbow region in both donor and recipient. The donor's vein is then clamped at the distal end of the incision, stripped, ligated proximally, cut below the ligature and washed out with 1 per cent. solution of sodium citrate. The recipient's vein is ligated distally, stripped toward the heart, clamped at the upper end of the incision, cut above the ligature and also washed out. The cannula tips are moistened by introducing a few drops of liquid petrolatum through the bulb end, then inserted into the respective veins of donor and recipient and are ligated in position. Aided by the use of a shoulder-constrictor blood rapidly enters the bulb when the donor's vein is released. As the blood rises in the tube a covering cap of liquid petrolatum is added to relieve surface tension. The rubber tube is now fitted over the top of the glass bulb, and the tube and syringe are used to produce positive and negative pressure as desired. (The bulb usually fills without resorting to suction.) The donor's vein is then held by the fingers, the recipient's vein released and the blood introduced into the latter at any desired rate of flow. When the bulb is nearly empty the recipient's vein is held and that of the donor released, thus allowing the bulb to again become filled with blood, after which the process continues as before. Bulbs of various sizes ranging in capacity from 100 c.c. to 400 c.c. have been used. Experience indicates that the largest size are, as a rule, the most satisfactory.

In experiments extending over a period of nearly a year transfusion has been performed according to this technic, on an average, from one to two times weekly. A considerable number of the animals have been killed and autopsy performed at the close of the experiment. Others have been examined after being kept for periods varying from one day to five weeks. From a study of the animals under observation following transfusion, we are convinced that the blood received by them functionates in a normal physiologic manner. In no instance have the clinical manifestations or autopsy findings revealed evidences of ill effects.

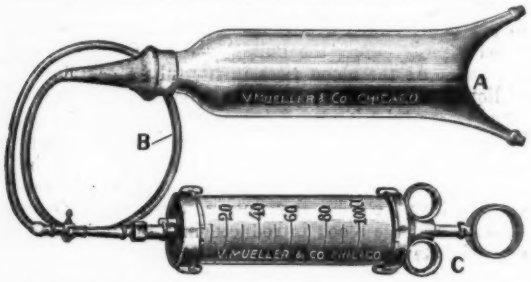
We have performed four transfusions in human patients according to this modified new method. In these operations were found two obstacles not encountered in experimental work. The first difficulty met was lack of blood in the donating vein, as a result of which only 300 c.c. were obtained. Since the time of this operation (Transfusion 1) we have used a constrictor around the arm of the donor and no longer want for blood. The second difficulty arose in one instance and was due to the unusually small size of the basilic vein of the recipient, who was a delicate woman with cubital veins little larger than those ordinarily found at the wrist. After transfusing this patient with

1. Schiotz, A.: Ugesk. f. Læger, lxxi, No. 50, 1373; abstr. in THE JOURNAL A. M. A., 1910, liv, 422.
2. Page, H.: Arch. Int. Med., 1911, vii, 16.
3. The culture employed was one isolated a year previously from a facial carbuncle and continuously grown on agar in the bacteriologic laboratory of the University of Chicago.
* From the Memorial Institute for Infectious Diseases.
4. THE JOURNAL A. M. A., Jan. 7, 1911, p. 35.
5. Brewer and Leggett: Surg., Gynec. and Obst., 1909, ix, 293.
6. Janeway: Ann. Surg., 1911, liii, 729.
7. Sorese: New York Med. Jour., 1911, xciii, 623.

250 c.c. of blood it was decided to change transfusion tubes because of delay incident to readjusting the arms of the donor and the recipient. The remaining portion of the recipient's vein was unfortunately found to be too small to admit the cannula and in preference to operating on the other arm further work was postponed. Previous experience in performing transfusions with the Crile cannula leads us to think that veins of annoyingly small caliber as were found in this patient would be rarely encountered. As a safeguard, however, bulbs with small-sized cannula tips should be held in reserve.

Clinical improvement, as manifested by the general condition as well as by increase in the percentage of hemoglobin and in the number of red blood-corpuscles, was obtained in all patients. In the two least satisfactory cases, discussed above, in which were given respectively 300 c.c. and 250 c.c. of blood, the patients showed as much improvement as those successfully transfused by the usual artery-to-vein anastomosis. In fact, despite general opinion, 250 c.c. of blood probably equals the amount ordinarily obtained by most methods.

The other two transfusions were performed without difficulty or complication. Blood in abundance was available in both instances. The most striking result was obtained in a patient in Presbyterian Hospital, under the care of Dr. James B. Herrick and Dr. N.




Device for transfusion of blood. A, glass bulb with cannula tips; B, rubber tube fitted over bulb and connected with C; C, syringe used for exerting positive and negative pressure as desired.

Sproat Heaney. The clinical findings were those of a sepsis of unknown origin complicated by uterine hemorrhages. For several days preceding transfusion the temperature, which was 103.2 F. at the time of operation, ranged from 102.5 to 105 F. Respirations before transfusion were from 40 to 44 per minute; the pulse, 140 per minute, thready, and of small volume. Blood examination showed 4,400 leukocytes, 2,800,000 red blood-cells and 45 per cent. hemoglobin. The patient was aroused with difficulty from a semicomatose condition; 1,050 c.c. of blood were transfused. Improvement in the general, physical and mental condition of the patient was immediate and remarkable. The respirations fell at once to 24 per minute. After four hours the pulse was 134, in eight hours 120, in sixteen hours 112, and in twenty-four hours 108 per minute. The temperature at the end of four hours was 100 F., in twenty-four hours, 100.6 F. During the week following, it ranged from 99 to 101 F. Examination of the blood after twenty-four hours showed 3,750,000 red blood-cells, with hemoglobin 55 per cent. "at least" (Dare). For three days the blood findings remained essentially the same, then gradually improved until the patient was discharged at the end of eight weeks with a red count of 4,600,000 and hemoglobin of 75 per cent. The leukocyte count varied from 4,400 to 6,100. Repeated daily examinations of blood-smears were negative. There were no nucleated red cells, no evidence of unusual variation in their size and no phagocytosis or other evidence of their disintegration or destruction.

Thanks are due Drs. Graham, Herrick, Irons and Heaney for clinical material furnished and interest manifested in this work.

31 North State Street.

## A SIMPLE METHOD FOR THE MECHANICAL TREATMENT OF GLENARD'S DISEASE

G. W. McCASKEY, A.M., M.D.
Professor of Medicine, Indiana University
FORT WAYNE, IND.

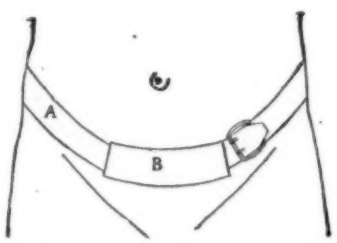
The treatment of splanchnoptosis is one of the most difficult problems confronting the practitioner, and especially is this true of the rather extreme type of cases which fall into the hands of the internist. We need all the help we can get from every possible angle, mechanical, medicinal, etc. The pathology is many-sided and its successful therapeutics must be equally so. While attending to other features of treatment, in many cases mechanical support of some sort is absolutely essential.

For many years I have been trying a great variety of mechanical supports as adjuvants in the treatment of this condition, including corsets, bandages of various sorts, with various modifications of the adhesive plaster support suggested by Dr. Rose. These adhesive strips, variously modified, have given me better results than anything else. Considerable difficulty, however, has been encountered on account of the extensive application of the plaster to the skin, the tendency being to roll up, produce cutaneous irritation and thus interfere with its continuous use. The mere application, without wrinkling, causes dermatitis in many cases. In order to accomplish permanent results, it must be kept up for a long period of time. Recently, in order to escape some of these difficulties and at the same time retain the advantages of adhesive plaster, a combination of the latter with the bandage has been used. The primary object is to get the point of support as low on the abdomen as possible. The support should be easily removed, its tension readily adjusted at any time and the area of plaster applied to the skin reduced to the minimum, in order to limit the extent of the skin irritation, when, as often happens, this results from the contact of the plaster.

A strip of zinc oxid adhesive plaster 2 or 2½ inches wide and about 5 or 6 inches long, the length varying with the size of the patient, is placed transversely across the extreme lower abdomen as nearly as possible to the pubes, the hair having been shaved clean for this purpose. To each end of this strip of adhesive plaster is attached a bandage of about the same width, long enough to reach around the body above the iliac crest, and be tied or otherwise fastened behind, or better, one end long enough to reach around and fasten at opposite end of plaster. If the ends of the plaster have a tendency to become loosened and pull up by traction of the bandage, this can be prevented by a narrow vertical strip across each end of the adhesive strap and applied to the skin above and below. The bandage itself is well padded with cotton, either folded within it or applied to the body immediately beneath it. This prevents any irritation of the skin from the bandage and permits of its being drawn as tightly as necessary in order to furnish

the necessary support from below. If it is a little too tight, it can be easily adjusted and can be entirely relaxed at night if thought advisable, although I believe it is better to keep some support during the night as well as during the day. The great difficulty with the adhesive straps carried entirely around the body, is that if applied somewhat too firmly they cause irritation, and the difficulty of removal complicates their management very much. By means of this fixed point of support in the lowest zone of the anterior abdomen, the pressure is applied exactly where it should be and does the greatest possible good. Altogether, it has given me better results with less annoyance and is more easily managed than any mechanical appliance I have ever used.

Of course, a certain amount of irritation will be produced beneath the plaster in the beginning of treatment, its severity depending on the delicacy of the skin, but the occasional removal of the plaster, cleansing the skin, and using a dusting powder for twenty-four or forty-eight hours will entirely overcome it, and finally it can be used continuously. This can, of course, be done with the plasters applied according to the method of Dr. Rose. I have had incurable patients return after an interval of a year telling me that they were still unable to dispense with their adhesive straps and wore them very nearly continuously, leaving them off for a day or two at occasional intervals.




A device for the mechanical treatment of Glenard's disease. A indicates double-padded bandage; B, zinc oxid strip.

It cannot be too strongly emphasized that mechanical support is only an auxiliary in the treatment of splanchnoptosis. The fundamental defects in the musculature and other structures of the abdominal wall, the lack of tone in visceral supports, imperfect circulation and innervation, together with the neurasthenic state so often, I had almost said so constantly, associated, must all be taken into account and therapeutically met. The most brilliant results that I have obtained have followed about one month's treatment in the hospital, with massage, electricity, and such treatment of the digestive tract as the particular case requires, combined with and followed by a prolonged continuance of mechanical support, with correct living, suitable diet, etc. Many of these patients can be substantially cured in this way, even the kidney, which is, of course, usually greatly prolapsed, permanently occupying a much higher position, although it is very rare in my experience for the kidney to go back to its normal position.

In some few of these cases surgical treatment will be required, but it is surprising how many of them, even of the severer type, will yield to prolonged systematic treatment along the lines already indicated; and the very simple mechanical support above described, having the obvious advantage of costing but a few cents, thus making it applicable to all classes of patients, has proved of great assistance to me.

407 West Main Street.

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

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W. A. PUCKNER, SECRETARY.

**PANKREON.** — Tannin-pancreatin-compound. — A mixture containing the active tryptic, diastatic and steatolytic ferments of the pancreas and about 8 per cent. of tannin.

It is obtained by the action of tannin on pancreatic substance. Pankreon is a dry, grayish, odorless powder of a slightly acidulous taste. It is soluble in alkaline liquids and practically insoluble in water and acid liquids.

1 Gm. of pankreon digests in thirty minutes at least 50 per cent. of 100 Gm. of sodium caseinate dissolved in 4,000 Cc. of water.

*Actions and Uses.*—Pankreon has a tryptolytic, amylolytic, emulsifying and mildly astringent action. This action it is claimed is developed in the alkaline intestinal fluids, although a portion of the ferments is likely to be destroyed by the gastric juice during its passage through the stomach.

Pankreon is said to be useful in conditions of disturbed metabolism or anomalies of digestion due to functional inefficiency of the pancreas; in diarrhea, dysentery, dyspepsia, marasmus, etc.

*Dosage.*—For adults 0.25 to 1.0 Gm. (4 to 15 grains) and for children 0.06 to 0.25 Gm. (1 to 4 grains), three times per day.

Manufactured by the Chemische Fabrik Rhenania of Aachen, Germany. U. S. patents Nos. 685,543 and 695,254; U. S. trademark No. 36,268.

## Therapeutics

### TREATMENT OF POISONING

As the symptoms and treatment of poisoning are many times so similar, it seems best to divide poisons into classes, and then to describe the treatment of each class, rather than to multiply individual descriptions.

The following classification is of types of drugs. The individual drugs with references to the class to which they belong, and therefore to the treatment advisable, will be found in a table on another page.

CLASS 1.—Irritants of the Gastro-Intestinal Canal.
- Acids.
- Alkalies.
- Irritant metallic salts.

CLASS 2.—Irritants of the Central Nervous System.
- Atropin-containing drugs.
- Caffein-containing drugs.
- Cocain.
- Scopolamin (hyoscin).
- Strychnin.
- Volatile oils.

CLASS 3.—Depressants of the Nervous and Circulatory Systems.
- All cardiac drugs in large doses.
- Coal-tar products.
- Cyanids.
- Hypnotics.
- Narcotic drugs.
- Nicotin.
- Most phenol-containing drugs.

CLASS I.—IRRITANTS OF THE GASTRO-INTESTINAL CANAL

Most irritants in weak dilutions are astringent, while most astringents in strong solutions are irritant. The action of astringents and irritants on mucous membranes is, therefore, largely one of degree. Some astringents act chemically to form albuminates with the protein substance found on moist mucous membranes, thus coating and preventing the further irritation of the membrane. At the same time the blood-vessels of the membrane are contracted, the membrane is dried, and the secretion diminished. This is typical metallic astringent action. If this albuminate is insoluble or very slowly soluble in the media surrounding it the action just described is the only action due to the astringent, viz., there may be more or less pronounced irritation at first, but the after-effect is sedative. If, however, this albuminate tends to dissolve at its junction with the mucous membrane, the action of astringency is then continued and may become so irritating as to cause severe inflammation or with some metallic salts or acids cause ulceration and corrosion. Such drugs or preparations are called "gastro-intestinal irritants," and in poisonous doses will all produce the same immediate symptoms. Later individual symptoms or conditions develop due to the character of the substance absorbed, to its chemical nature and to the amount of local corrosion that it can cause.

Different metals have different powers of astringency and irritant action; also different salts of the same metal vary in the irritation which they will produce. The acid formed after the dissociation of the metallic ion decides the amount of irritation that the salt will cause. Also the greater the ease with which the metallic ion is dissociated from its acid ion the greater the corrosion; therefore, the soluble nitrates and chlorids are much more corrosive than the acetates, citrates and tartrates. The sulphates are between these groups in their irritant effect.

The most astringent metals in the order of their astringency are lead, iron, alum, copper, zinc and silver. The most astringent salt is lead acetate, while the most irritant salts are mercuric nitrate, mercuric chlorid and zinc chlorid. The sulphates and acetates of copper and zinc and the nitrates of sulphur and lead, if applied in weak solutions, are astringent, but are irritant if in large quantities or in strong solutions. Insoluble preparations of mercury may irritate and corrode, but insoluble salts of other metals are generally only astringent. Double salts of the metals are less likely to irritate, because they ordinarily do not precipitate albumin. A styptic strongly coagulates albumin, and hence causes a clot which stops hemorrhage.

### *Symptoms*

The symptoms common to all gastro-intestinal irritants are irritation or corrosion of the mouth, throat and esophagus, depending on the concentration of the poison swallowed. Other symptoms are: more or less gastric pain; nausea; vomiting, first of the contents of the stomach, then of mucus, then often of blood; later diarrhea, first of the contents of the bowels, then mucus and, perhaps, blood are passed. There are more or less symptoms of shock due to the reflex action on the heart from irritation of the gastric branches of the pneumogastric nerve. The symptoms of collapse are a rapid, weak heart, dyspnea, cold surface of the body, clammy, cold perspiration, tendency to syncope, and a gradual failure of the pulse.

The symptoms of poisoning by gastro-intestinal irritants are:

**Immediate Symptoms:**

- Pain.
- Nausea.
- Vomiting.
- Colic.
- Diarrhea.
- Collapse.

**Frequent After-Symptoms:**

- Inflammation and ulceration of the mouth, throat and esophagus.
- Gastritis.
- Duodenitis (jaundice).
- Enteritis.
- Albuminuria.
- Nephritis.
- Ulceration, perforation, peritonitis.

**Possible Remote Symptoms:**

- Fatty degeneration of the liver, kidneys and heart.
- Strictures from the healing of the corrosions and ulcerations.

### *Treatment of Corrosive Poisoning*

Immediate Treatment: Warm water drinks containing the antidote, if there is one (an emetic or a stomach-tube is rarely needed, and, if necessary, should be used with great caution and gentleness); albuminous and mucilaginous drinks, as milk, egg albumin, flaxseed infusions, slippery elm infusions, etc.; hypodermatic injections of morphin sufficient to stop pain and continued vomiting.

Treatment of Collapse: Rest, quiet; dry heat, especially to the region of the heart; atropin sulphate, 1/100 of a grain hypodermatically; strychnin sulphate or nitrate, 1/30 of a grain hypodermatically; repeated in three hours, if needed (large doses of strychnin are not advisable, as it cannot stimulate the heart or raise the blood-pressure as so long believed); camphor, a syringeful hypodermatically of a saturated solution in sterile olive oil (or a ready-prepared ampoule), every half hour for several doses; caffein as strong coffee, by rectal injection if there is no diarrhea.

After-Treatment: Give a saline purge, if deemed necessary. For acute gastritis give morphin sufficient to stop the pain, mucilaginous drinks, rectal alimentation. Give cardiac stimulants, if needed. Later give bismuth subcarbonate in large doses (2 grams or 30 grains) twice a day; later, a milk diet. Treat duodenitis and nephritis, if they occur. Order absolute rest in bed for one or two weeks, if the irritation or corrosion was severe, lest perforation from ulceration be precipitated. Treat ulcer of the stomach and strictures, if they occur.

CLASS II.—IRRITANTS OF THE CENTRAL NERVOUS SYSTEM

The principal symptoms of poisoning by drugs of this class are those of irritation of the central nervous system. There is restlessness and nervous excitement: there may be, later, delirium and convulsions, and, perhaps, still later, coma. The pulse is full, bounding, and generally rapid; there may even be delirium cordis or tachycardia. Respirations are increased in rapidity, the face is flushed and the skin of the body feels hot and dry, and there often is increased temperature. There may be vomiting; there often is diarrhea; there is vesical irritability, and often strangury, depending

TABLE OF SPECIAL SYMPTOMS AND SPECIAL TREATMENT OF VARIOUS POISONS

| Name | Poison Class | Special Symptoms | Special Treatment | Remarks |
|---|---|---|---|---|
| Acetanilid | Class III | Cyanosis; lowered temperature. | Oxygen inhalations; artificial respiration; sodium bicarbonate. | Chronic poisoning causes anemia. |
| Alcohol (ethyl) | Class III | | | There may be acute delirium, in which case treat more as Class II. |
| Alcohol (methyl) | Class III | Often late unless dose is large. | Pilocarpin hydrochlorid in one-eighth gr. dose is recommended; other treatment like Class III. | More or less loss of vision by the third or fourth day. |
| Ammonia | Class I | May be swelling and inflammation of the bronchial tubes, hence dyspnea. | Diluted vinegar; lemon juice; olive oil; castor oil. | Stomach-tube contra-indicated. |
| Amyl nitrite | Class III | Respiratory and cardiac failure. | Artificial respiration; Trendelenburg position. | Treatment of poisoning by other nitrites similar. |
| Anilin | Class III | | | See treatment for acetanilid. |
| Antimony | Class I | Diarrhea soon occurs; late symptoms are those of Class III; circulatory depression. | Tannic acid, one-half teaspoonful, in water; later magnesium carbonate. | If much of the poison has been absorbed, fatty degeneration of the organs may develop. |
| Antipyrin | Class III | Profuse sweating; lowered temperature. | Sodium bicarbonate | See acetanilid. |
| Arsenic | Class I | Frontal headache; constriction of the throat; colicky pains; eruptions on the skin. | Official antidote, ferri hydroxidum cum magnesii oxido, 3 oz.; later castor oil. | Renal inflammation is a frequent sequence. |
| Atropin | Class II | Flushed face; dilated pupils; dry throat; rapid heart. | Tannic acid; morphin in not too large doses as a partial physiologic antidote. | Catheterize the bladder. |
| Belladonna | Class II | | | See atropin. |
| Bromids | Class III | | | Treatment similar to chloral. |
| Caffein | Class II | | Dry heat to the body | |
| Camphor | Class II | | | |
| Cannabis indica | Class II | | | |
| Cantharides | Class I | Kidney and bladder irritation; strangury; abortion. | | |
| Castor oil beans | Class I | Collapse. | | |
| Carbolic acid | Class III | | | See phenol. |
| Chloral | Class III | Pupils dilated; coma | | Inhalations of oxygen; artificial respiration; dry heat; Trendelenburg position. |
| Cocain | Class II | Pupils dilated; often rapid heart; often cyanosis. | Tannic acid if the drug has entered the stomach. | If collapse, Trendelenburg position; if respiratory failure, oxygen and artificial respiration. |
| Codein | Class III | | | See morphin. |
| Creosote | Class III | | | See phenol. |
| Chromic acid | Class I | Often cramps in the legs | Chalk; lime water; magnesia | Correct name, chromium trioxid. |
| Cyanids | Class I and III. | May act like hydrocyanic acid; may cause stomach symptoms. | | See hydrocyanic acid. |
| Digitalis | Class III | The cerebrum not much affected. | Tannic acid; nitroglycerin hypodermatically. | |
| Ergot | Class III | Pupils dilated; cold surface of the body; circulatory depression. | Alcohol; nitroglycerin | |
| Formaldehyd solution. | Class I | | If swallowed, very weak solutions of ammonia; diluted aromatic spirits of ammonia. | If inhaled or taken in strong solution, danger of edema of the glottis. |
| Gelsemium | Class III | | | |
| Hydrochloric acid. | Class I | Lips and mouth show white eschar. | Lime water; magnesia | Emetics and stomach-tube should not be used. Chalk and alkaline carbonates should not be given. |
| Hydrocyanic acid. | Class III | Odor of almonds; respiration and heart fail immediately. | Patient on back with feet raised; artificial respiration; ammonia inhalations; camphor and atropin injections; wash stomach with stomach tube. | |
| Hyoscyamus | Class II | | | See atropin. |
| Iodoform | Class II and III. | May be symptoms of nervous excitation, with fever; later, prostration. | | |

TABLE OF SPECIAL SYMPTOMS AND SPECIAL TREATMENT OF VARIOUS POISONS—(*Continued*)

| Name | Poison Class | Special Symptoms | Special Treatment | Remarks |
|---|---|---|---|---|
| Lead acetate | Class I | Colic; muscle cramps; convulsions; stupor; coma. | Dilute hydrochloric, a teaspoonful well diluted; magnesium or sodium sulphate 30 grams (1 ounce). | Later, multiple neuritis. |
| Lobelia | Class III | | | |
| Matches | Class I | | | See phosphorus. |
| Mercuric chlorid (corrosive sublimate). | Class I | Convulsions; coma; collapse | Raw eggs and albumin water | Late symptoms are salivation; nephritis; multiple neuritis. |
| Morphin | Class III | | | See opium. |
| Muriatic acid | Class I | | | See hydrochloric acid. |
| Nicotin | Class III | | | See tobacco. |
| Nitric acid | Class III | Mouth and lips may be stained yellow. | | See remarks under hydrochloric acid. |
| Nitroglycerin | Class III | | | See amyl nitrite. |
| Opium | Class III | Pupils contracted; respiration slowed. | Tannic acid; atropin; wash stomach with potassium permanganate solution 1 part to 1,000. | Catheterize the bladder and wash out stomach frequently; artificial respiration as long as heart continues to beat. |
| Oxalic acid | Class I | Depressed circulation; cyanosis. | Magnesia; chalk; later, magnesium sulphate as cathartic. | Alkalies and alkaline carbonates are contra-indicated. |
| Paraldehyd | Class III | | | |
| Phenacetin | Class III | Lowered temperature | Sodium bicarbonate | See acetanilid. |
| Phenol | Class III | If solution is strong, white eschar on lips and mouth; collapse; coma; urine black after standing. | Dilute alcohol 1 part to 4, or clear whisky or brandy; sodium sulphate in solution. | Avoid all oils and fats. |
| Physostigma | Class III | Pupils contracted; may cause vomiting and purging. | | |
| Physostigmin (eserin). | Class III | | Tannic acid. Strychnin is a physiologic antidote. | See physostigma. |
| Phosphorus | Class I | Breath smells garlicky. Most serious symptoms sometimes slow in developing. | Use copper sulphate as emetic; wash stomach with 1-1,000 potassium permanganate solution. Later, magnesium sulphate. | Avoid all oils. If much absorption, likely to cause serious liver and kidney inflammation. |
| Pilocarpin | Class III | | Tannic acid; atropin hypodermatically. | |
| Potassium chlorate. | Class I | | | Nephritis a frequent sequela. |
| Potassium hydrate. | Class I | | | See ammonia. |
| Prussic acid | Class III | | | See hydrocyanic acid. |
| Ratsbane | Class I | | | See phosphorus. |
| Resorcin | Class III | | | See phenol. |
| Rough-on-rats | Class I | | | See arsenic. |
| Salicylic acid | Class II | | | If taken in concentrated form, treat stomach as in Class I. |
| Salol | Class III | | | See phenol. |
| Santonin | Class III | | | May be delirum and convulsions. |
| Scopolamin (hyoscin). | Class II and III. | May act like atropin, but may cause serious circulatory depression. | | See atropin. |
| Silver nitrate | Class I | | Sodium chlorid (table salt solution). | |
| Sodium hydrate. | Class I | | | See ammonia. |
| Stramonium | Class II | | | See atropin. |
| Strophanthus | Class III | | Nitroglycerin | |
| Sulphonal | Class III | May cause ptosis, suppression of the urine, and papular skin eruptions. | Sodium bicarbonate; later, magnesium sulphate. | Treatment quite similar to acetanilid. |
| Sulphuric acid | Class III | Lips and mouth may show black eschar. | | See remarks under hydrochloric acid. |
| Tobacco | Class III | Prostration | Tannic acid if tobacco or nicotin has been swallowed. | Trendelenburg position. |
| Trional | Class III | | | See sulphonal. |
| Veratrum | Class III | | | See aconite. |
| Veronal | Class III | | | See sulphonal. |

on the drug. Some drugs of the atropin series may cause vesical paresis. There are muscular twitchings: there may be cramps; and, as above stated, convulsions may occur. The pupils are of course dilated if the poisoning is by any member of the atropin series or by cocain, and they often become dilated during cerebral excitement from other members of this group.

The symptoms of poisoning by irritants of the central nervous system are:

**Immediate Symptoms:**

- Gastro-intestinal burning and pain, perhaps nausea and vomiting, if the poison contains an aromatic or volatile oil.
- Cerebral excitement.
- Rapid heart.
- Rapid respiration.
- Erythemas and flushing of the face and surface of the body.

**Frequent After-Symptoms:**

- Purging.
- Frequent urination.
- Muscular twitchings.
- Delirium.
- Convulsions.
- Coma.
- Failure of the circulation.

**Possible Remote Symptoms:**

- Abortion in pregnant women.
- Albuminuria and nephritis if the poison is a renal irritant as are many of the volatile oils.
- Prolonged sleeplessness and nervous irritability.

### *Treatment of Poisoning by Irritants of the Central Nervous System*

Administer warm water with the antidote, if there is such.

Give an emetic. The emetics in the order of their strength are: mustard (a tablespoonful in a glass of warm water); ipecac (2 gm. [30 grains] of powdered ipecac, or a tablespoonful of the syrup); zinc sulphate (2 gm. [30 grains] dissolved in water); copper sulphate (0.50 gram [7½ grains] dissolved in water); apomorphin (1/10 of a grain given hypodermatically). Any of these emetics may be repeated in fifteen minutes if there is no satisfactory result. It should be remembered that apomorphin is depressant to the circulation.

Wash out the stomach by means of a stomach-tube if there is no satisfactory emesis. If the vomiting is satisfactory, continue to administer warm water until the stomach washes clean.

Administer one or more nerve sedatives. The best are bromids and chloral, and the dose depends on the character of the poison. They are best administered by the rectum, at least provided nausea and vomiting is continued after the stomach has been cleared of the poison. If there is much circulatory depression, the best sedative to administer is morphin, hypodermatically, perhaps combined with scopolamin (hyoscin). An adjunct to the action of the morphin as a central nervous sedative and as a strengthener of the circulation is ergot, given intramuscularly. If there are convulsions, inhalations of chloroform are required.

Apply dry heat to the body, if the surface is cool or there is a tendency to collapse.

If heart failure occurs later in the poisoning, from shock or from the depression caused by nausea, such circulatory stimulants should be given as camphor (a saturated solution in olive oil); strophanthin (given hypodermatically or intravenously in a dose of 1/500 of a grain); epinephrin (adnephrin, adrenalin, adrin, supracapsulin, suprarenalin) in aseptic ampoule or 1 c.c., 15 minims, of a 1 part to 10,000 solution; or intramuscular injection of some aseptic ergot preparation (1 ampoule) and repeat in an hour, if needed.

Give plenty of water with a demulcent, if there has been irritation of the stomach either from a volatile oil poisoning or from the emetic used.

### CLASS III.—DEPRESSANTS OF THE NERVOUS AND CIRCULATORY SYSTEM

The symptoms of poisoning by drugs of this class are, as their name implies, those of circulatory and nervous depression. The pulse is either slow or rapid, but generally weak; the surface of the body generally becomes cold; respirations are slowed; pupils are generally dilated unless the poison is morphin or nicotin; often the patient becomes faint; drowsiness soon develops, and if a narcotic has been taken stupor soon develops; perhaps convulsions will occur; later paralysis and coma.

**Immediate Symptoms (if the poison is a depressant of the nervous system):**

- Depression.
- Drowsiness.
- Slow, weak pulse.
- Slowed respiration.
- Paralysis.
- Coma.

**Later Symptoms:**

- Muscular weakness.
- Circulatory weakness.

**Immediate Symptoms (if the poison is a circulatory depressant):**

- Rapid or slow, weak pulse.
- Cardiac anxiety.
- Cold, clammy perspiration.
- Face pale.
- Perhaps convulsions.
- Syncope.

### *Treatment*

Wash out the stomach (emetics or stomach-tube, as see above).

Administer not only the chemical, but a physiologic antidote, if there is such.

Apply dry heat to the body.

If the poison was a narcotic, give cerebral and nervous stimulation, as caffein (coffee), camphor, atropin, strychnin.

If the poison was a circulatory depressant, give atropin, ergot, epinephrin or strophanthin, as above described.

Compel prolonged mental, circulatory and physical rest.

The accompanying table is arranged alphabetically.

The second column gives the class to which the poison belongs, and the treatment for this class has been given under the headings of the general treatment for each class. Therefore the number of the class to which the poison belongs refers to the treatment there outlined.

Column 3 ("special symptoms") suggests symptoms of poisoning which are characteristic of the drug, such symptoms being in addition to those which are characteristic of the class of poisons to which the drug belongs.

In the fourth column ("special treatment") is indicated any chemical or physiologic antidote that is valuable in treating poisoning by the drug, and is in addition to the general rules discussed above.

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[*For other information see second page following reading matter*]

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## HUGHLINGS JACKSON AND NEUROLOGY

He who stimulates others to work, who unfolds a new idea, discusses a new relation between facts, or brings together a mass of hitherto uncorrelated observations, and puts them in usable form for the multitude—he is a great man. Modern commerce and applied science have been the direct result of the work of such men, but in no field are there required mental qualities of such high order as in medicine.

To wrest from the future secrets that will serve mankind requires a constructive imagination that visualizes, as though through a telescope, the hitherto unseen, combined with attention to microscopic detail and acuteness in analysis. These qualities, though rarely found combined in one mind, were realized in one of England's greatest physicians, whose death is recorded by our London correspondent.[1]

The name of John Hughlings Jackson, known all over the world through the term "Jacksonian epilepsy," stood for infinitely more than nomenclature. He has been the founder, the creator, the inspiration of English neurology for at least forty years. As far back as 1877, he had established the fact that "the cerebellum is the center for continuous movements, and the cerebrum for changing movements," and on the doctrine of the tonic nature of cerebellar activity thus established, he worked till his death. Four decades ago he defined apraxia. He gave us our knowledge of temporosphenoidal disease, of double hemiplegia, and of many of the more important manifestations of epilepsy.

He began the study of the nervous system and its diseases at a time when all knowledge concerning the subject was fragmentary and empirical. Bringing to bear on this scattered disconnected material a mind, which, as one of his contemporaries said, "combined singular acuteness in analysis with a remarkable power of philosophic thought, and wide generalization," he slowly and surely worked out the true principle of localization of function in the nervous system. To us the idea of brain localization is as familiar as that of the circulation of the blood; it is hard for us to realize that even in the latter half of the last century the only idea of cerebral localization was that which the phrenologists had distortingly adopted from the teachings of Gall and Spurzheim.

When Jackson began to study cases of nervous diseases, the French physiologic school was brilliantly to the fore. Yet as a young man he wrote: "I should be misunderstood if I were supposed to underrate the physiological study of disease of the nervous system. Indeed, I think its neglect shows want of education, but to neglect the clinical shows want of experience and sagacity. Never forget that we may run the risk of being overeducated, but undercultivated."

Jackson was the greatest scientific clinician in neurology of the nineteenth century in England. The whole of the material from which he drew his conclusions was found in the wards of a hospital. He never performed an experiment, yet he has influenced the course of neurologic medicine more profoundly than has any other one observer. Each patient was to him an example of some disturbed process, and helped to elucidate the law of normal and morbid functions. The field of his great work was the National Hospital for the Paralyzed and Epileptic, Queen's Square, where he was actively at work for forty-four years, and the London Hospital, where he served for thirty years.

The titles of the papers he published, which in 1895 filled five quarto pages, in double column, in the *London Hospital Gazette*, form in themselves a history of the growth of neurology under his compelling genius. Much of his writing that sounded obscure when published has borne fruit in the work of later neurologists; for he divined, or perceived prophetically, from his rich experience, much that has required years of patient experiment to prove. The full anatomic demonstrations of Dr. Jackson's theories and discoveries have been published only in the last four or five years; but bit by bit, from all parts of the world, have come corroborations of his outlines, and fruits ripened under another's care from the seed he so generously gave. Perhaps it is because of his extreme modesty and retiring nature, as well as the abstract nature of his studies, that even in his own country the public has not known him as one of its greatest men; but he belongs to that brilliant group which included Darwin, Huxley, Tyndall, Galton and Spencer, the latter being his warm personal friend.

He inherited his energy, courage and caution from his father, and his tender, affectionate and constant nature from his mother; but his mental stimulus, he was wont to say, came from the lectures of Sir James Paget, who was in his zenith as a teacher in Dr. Jackson's student days.

Although he was childless, his love of children was great. His quiet humor used to charm his students. He would at the end of one of his illuminating lectures caution them not to take him too seriously, as he was only a "Bedlamite theorist." It was he who after an operation in trephining expressed his regret that the

1. Page 1467

opportunity of putting a joke into a Sultan's head had been let slip.

Jackson's friends compared his genius to that of Samuel Johnson, but the great neurologist was gentle and polished, whereas the great lexicographer was rude and bearlike. Jackson's resemblance to his prototype was displayed, however, in his power of brushing aside all subterfuges, and going to the very essence of the matter. His was an exceptionally well-rounded character; it is a rare personality that we are resigning to the past.

## HYGIENE AND RACE STAMINA

The larger effect of hygienic measures is a question which presents many moot points. From a humanitarian standpoint no one questions the duty of safeguarding by every means within the power of science the lives of the population and especially the infant population. From the standpoint of physical race betterment, however, many regard hygiene and sanitation as of doubtful or negative value, since these measures allow the weak to live and perpetuate their kind. Assuming that in a considerable proportion children who succumb to bad hygiene and defective food are inherently weak—a theory by no means universally admitted—it would be conceded that if they were aided in reaching a maturity which must be more or less defective they would transmit their weaknesses to their descendants and thus contribute measurably to the deterioration of the race as a whole. An attempt to show how this works out under actual existing conditions as between the Chinese and the western white population has been made by Prof. E. A. Ross.[1]

Ross says that, on account of lack of good hygienic conditions in China, out of ten children born, the three weakest will die in infancy and five others will probably fail to grow up, while in our own country, out of the same number of children born, only three will fail to reach maturity. This would seem to favor better hygienic conditions for the betterment of the race, yet Ross feels that there may be some doubt on this point. For, of the seven surviving, the five corresponding to the five additional Chinese who die, will, according to hypothesis, be weaker in constitution and will transmit their weaker qualities to the offspring; while the two surviving Chinese are the hardiest of the lot and will transmit their hardy qualities to their offspring, thus in the end increasing the general stamina of the race.

In order to test this idea, Ross closely questioned thirty-three physicians practicing in various parts of China, chiefly in missionary hospitals. Twenty-nine were positive that the Chinese physique evinces superiority in some respects over that of the white people of the western world. It has been found that surgical shock is rare among the Chinese, that they endure surgical operations well and recover from them, from most serious injuries and from septic conditions in an astonishing manner. They also stand higher degrees of fever, are more resistant to pus-producing germs and are very tolerant of pain, while fewer Chinese women die from puerperal fever. This applies particularly to the lower classes, who live among the most unhygienic surroundings. The percentage of recoveries in the poorly-equipped hospitals from the gravest injuries and operations equals or exceeds that under the ideal conditions of the best-equipped hospitals of Berlin or Vienna. This indicates a strong and abiding race vitality and it may reasonably be assumed that it is a direct result of the survival of the strongest, or at least most enduring, members of the race. In other words, the selective process imposed by unfavorable surroundings, has established in the Chinese a higher degree of immunity to conditions inimical to survival.

The deduction would seem to be that the way to produce a strong race well endowed with vital qualities would be for that race to multiply to excess, and then to undergo murderous reduction by exposure to disease and unhygienic conditions. A second consideration shows that this process has its drawbacks. While under poor or bad conditions the Chinese will outdo the white man, under good conditions the latter rises to a higher level of efficiency. The Chinese, who can underlive, cannot outwork the white man under the white man's conditions. In short, the low-caste Chinese seems to illustrate very well an often misapprehended fact, namely, that the survival of the fittest is not necessarily the survival of the best, the most efficient, or even the strongest; it is simply the survival of those best fitted to survive in that particular environment—and not necessarily well fitted for any other environment. Those who are fittest for a white man's environment are less fit for that of the Chinese, and vice versa. The fitness of the low-caste Chinese is fitness to endure existence on the lowest terms. On the evidence so far presented, we may dismiss the case against hygiene as an agency in the deterioration of the race with a Scotch verdict—not proven.

1. Ross, E. A.: The Race Fiber of the Chinese, Pop. Sc. Monthly, October, 1911, p. 403.

## THE DEFENSE OF THE ORGANISM AGAINST TUBERCULOSIS

The investigations of Calmette and Guérin[1] on experimental tuberculosis have yielded certain interesting and novel results. Their investigations began with the study of the modifications of the tubercle bacillus during its passage through the digestive tract. This led to the study of a series of cultures of tubercle bacilli on potato in 5 parts beef-bile to 100 parts glycerin. A single passage on this medium increased the virulence of the bacillus very much for the guinea-pig, but, on the other hand, successive cultures led to progressive attenuation of virulence. The bacilli cultivated in the manner

1. Calmette and Guérin: Ann. de l'Inst. Pasteur, 1911, xxv, 625.

indicated possessed the same variations in virulence for cattle as for guinea-pigs; in cattle intravenous injection produced a febrile disease which rarely terminated fatally and in the course of which no tubercles were formed in any of the organs. A number of animals were vaccinated with increasing doses of bile bacilli, some receiving as much as 200 mg. of bacilli intravenously; of these animals, some became very cachectic, but when they were slaughtered not the faintest trace of any tuberculous lesions could be found.

The serum of animals which had been treated in this way was examined as to its effects on tuberculous infection in guinea-pigs and cattle. This serum was strongly agglutinating for tubercle bacilli and caused an abundant precipitate with tuberculin. In the guinea-pig the serum did not exercise any preventive or curative action. On the other hand, it seemed to hasten the development of the lesions. In cattle the results were somewhat different. While the serum did not seem to possess any immunizing or bactericidal power, even in large doses, it caused, when injected together with bile bacilli, more rapid elimination of the bacilli by the liver and intestines than usually takes place.

It was also found that the immunized animals eliminated not only the attenuated bile bacilli, but also virulent bacilli, the latter also passing through the organism without causing any tuberculous lesions. It has been noticed before that tuberculous cattle eliminate bacilli with greater rapidity than do normal animals. The general conclusion is reached that the more or less well-marked resistance to tuberculosis produced in cattle by means of diverse methods of vaccination depends on the power acquired by the organism to eliminate tubercle bacilli by way of the liver and the intestines. So long as this condition exists the tubercle bacilli do not behave as active parasites, but more like simple, inoffensive, foreign bodies.

One may regard these phenomena as another expression of the fact that the tuberculous organism possesses considerable resistance to reinfection, but the exact mechanism involved is not yet clear and presents problems for further investigation.

## TYPHOID FEVER AND THE WATER OF THE GREAT LAKES

The rapid growth of cities on the Great Lakes in the United States and Canada has raised many problems for the sanitarian. It is natural that these cities should seek to obtain their water-supply from the great bodies of fresh water close at hand. It seems to have been equally natural that they should attempt to dispose of their sewage by discharging it into the lake, thus effectually preventing a nuisance by simply diluting the sewage with a large volume of oxygen-containing water. So far as the avoidance of offense to the senses is concerned this method of sewage disposal appears in most cases to have been eminently satisfactory. Not so much can be said on the sanitary side. There is evidence that even in the case of small towns and cities this practice has been accompanied by an excessive amount of typhoid fever, while in the larger cities like Chicago, Cleveland, Milwaukee and Toronto it is a familiar fact that water-borne typhoid fever has been at times a veritable scourge.

Many of the cities so situated have attempted to avoid contamination of the drinking-water with sewage by extending the water intakes far out into the lake. For a time such an expedient usually proves efficacious and a reduction in water-borne disease is noted. After a longer or shorter period, however, the increasing volume of sewage due to increase in population again makes itself felt by an alarming contamination of the water at the intakes, and eventually typhoid fever again reaches a high point. Some few cities are so placed topographically that they can take advantage of favorably situated bays or points of land to divert the flow of sewage away from the water intakes and so, it is hoped, lessen pollution of the water-supply. In some cases also there has been a misplaced reliance on prevailing winds or currents for keeping the sewage away from the drinking-water source. Exact observations with floats and bacterial tests have now shown that neither winds nor currents, nor yet local topography, can be altogether depended on to prevent occasional contamination.

The experience of practically all the large cities on the Great Lakes has followed the lines indicated above. Detroit, to be sure, has suffered less than many others because of its ability to discharge its sewage into the Detroit River at a point below its water intakes. There is, however, danger of contamination from the considerable population draining into Lake St. Clair above the intakes, and at least one serious epidemic of typhoid fever in Detroit has been attributed by high authority to water infection. Other cities have fared even worse. The city of Erie, where for years the typhoid death-rate has been very high, experienced only last winter an extremely severe explosive outbreak of water-borne typhoid fever, over 750 cases being reported in January and February, 1911. Very recently in Cleveland, Buffalo and Milwaukee, concern has been expressed over the gravity of the local situation and in some cases disinfection of the water-supply with hypochlorites has been carried out.

In view of the well-recognized danger which hangs over some of the most flourishing of our American cities the studies set on foot by the Public Health and Marine-Hospital Service on the sewage pollution of interstate and international waters are to be warmly welcomed. The first section dealing with Lake Erie and the Niagara River has lately been published.[1] Ample illustration of the conditions we have cited will be found in its pages and the publicity there given to facts long known to students of public health, should do much to stimulate action. Even if in some cases the writer's

1. McLaughlin, A. J.: Bull. 77 Hyg. Lab.

conclusions are too hasty, as appears in the case of Toledo, the mass of data contained in this report will be of great value in inducing expert study of local conditions. The conditions under which water-borne typhoid fever occurs in the cities on the Great Lakes appeal to the imagination of the average citizen, and we cannot believe that the "endless chain" of typhoid bacilli passing into the sewers and back again through the water-pipes will be allowed to continue unbroken.

## Current Comment

### ACTIVE IMMUNIZATION IN DIPHTHERIA AND OTHER DISEASES

While the discovery of diphtheria antitoxin by Behring has served to revolutionize our attitude toward this much-dreaded disease, the use of antidiphtheric serum for protective purposes is not altogether satisfactory. It is possibly owing to deficiency of antibacterial powers in antidiphtheric serum that its prophylactic administration is not of more prolonged effect and sometimes even without any effect. Blumenau[1] reports the occurrence of nineteen cases of diphtheria in 348 persons who had been given the usual prophylactic treatment, the infection in several cases following two, and in one instance three, preventive doses of serum. In view of this large proportion of failures, he was led to investigate a method of active immunization against diphtheria originally proposed by Dzerjgowsky, and his results are sufficiently striking to deserve attention. It had been previously shown that the repeated subcutaneous injection of very minute doses of toxin could produce a relatively high antitoxic power in the human being, and Dzerjgowsky found that equally good results followed the application of toxin to the nasal mucosa by tampons. Blumenau used this method with seven children, and with sufficiently numerous applications he was able to raise the antitoxin content in one case to ten units per cubic centimeter, or to 1,000 times its former value. The rise in other cases was not so marked, but in all it compared favorably with, and in several instances surpassed, the antitoxic power of several individuals who apparently possessed a high degree of natural immunity. As to the permanency of the protection so acquired, data are lacking for the human being, but from results in lower animals it should be of considerable duration as compared with the very transient passive immunity conferred by the use of antitoxic serum. If Blumenau's results are supported by further work, however, the method may be found to have, as he points out, great applicability in the wholesale prophylaxis in institutions in which large numbers of children are habitually aggregated. At all events an effective, simple method of active immunization for prophylactic purposes is desirable in order to limit as much as possible the spread of diphtheria. The success of protective inoculations against typhoid is established. Now that we definitely know that the cause of measles is present in the blood in the early stages of the disease, a convenient source of the virus, whatever its nature, being available, it does not appear impossible that a method of protective inoculation against this disease may be devised. And as to scarlet fever, the demonstration by Koessler[2] that the lymph-nodes harbor a specific antigen or virus of unknown nature, furnishes a basis for the hope that new methods of protection against even this disease soon will be proposed and tried.

### ELIMINATE THE TERM "ALLOPATH"

Elsewhere in this issue[3] we reproduce some correspondence between a committee representing the Fulton County (Ga.) Medical Society and the publishers of a city directory. The committee protests against the classifying of non-sectarian physicians as "allopaths." We commend the action of this Georgia society to societies all over the country, and especially to practitioners who permit themselves to be called, or who call themselves "allopaths."

### SUCCESS OF COLD STORAGE IS NO GUARANTEE OF THE QUALITY OF COLD-STORAGE FOOD

In Chicago recently a banquet was given for which the menu was prepared from food which had been in cold storage for many months. The object of the banquet was to prove that food, even though stored for a long time, is both healthful and palatable. It only proved that some food may be palatable and harmless after such storage. The extensive publicity given to this banquet and its object by the energetic press bureau of the cold-storage people was therefore a very amusing feature. We are not aware that anyone has ever denied that, when properly handled and surrounded by the necessary conditions, food can be kept in cold storage in a fairly acceptable condition for comparatively long periods of time. If this banquet committee could not find, and if the public did not find, some acceptable food from among the millions of dollars' worth of ancient materials in the various warehouses, the cold storage of food products as a business would have been terminated long ago on account of financial failure. Cold storage is a good thing. It has been used, in a crude way, in country cellars and spring houses for generations. Its modern development has added immensely to the possibilities of our tables, but like many other good things, it is frightfully abused. In order to get good results, one must have good material to store, and must be able to prevent harmful changes during storage. The condemnation by governmental authorities of millions of pounds of cold-storage food shows the defects of the actual system in at least one respect. It is only by the constant vigilance of health officials that greater and more dangerous abuses are prevented. The employment of cold storage as a means of wresting unrighteous profits from the public, by buying large quantities of food products when cheap and plentiful and retailing them at higher prices when scarce, is another serious abuse, which, however, affects the pocket-book rather than the health of the people.

1. Blumenau: Jahrb. f. Kinderh., 1911, lxxiv, 141; abstr. in THE JOURNAL, October 14, p. 1328.

2. Koessler: Jour. Infect. Dis., 1911, ix.

3. Page 1473.

The fact that the banqueters found the food palatable and survived seems to us to be beside the point. If a banquet such as this had been made an adjunct to a campaign for preventing the abuse of cold-storage methods, for limiting them to their legitimate field and for perfecting the methods of handling food products, more would have been accomplished by the cold-storage people in overcoming the prejudice of the public and in popularizing cold-storage goods.

### LIABILITY FOR OBLIGATIONS OF OTHERS MUST BE IN WRITING

In the Medicolegal Department of this issue,[1] appears an abstract of the decision of the Supreme Court of Oklahoma which is of practical interest to physicians. The testimony showed that the defendant asked the plaintiff, a physician, to go to see the wife of his tenant and added "I will see that you are paid." The court says that "the question was whether . . . the credit was given solely to the defendant or to the husband of the woman . . . with the understanding that if the husband did not pay the charge then the defendant would. If the former, that is, if the defendant's liability was primary, such verbal contract was valid and the defendant was liable. But if the intention was that the husband should be primarily liable and that the defendant's liability should be only collateral . . . then the contract was void as within the statute of frauds which requires promises to answer for the debts of others to be in writing." To put the language of the court in every-day terms: If A says to a physician, "Go and take care of B and I will see that you are paid," this constitutes a direct contract between the physician and A, and an oral agreement to this effect is valid and will be sustained by the courts. But if A says to the physician, "Go and take care of B and, if he does not pay you, I will," such a statement is the assumption by A of an obligation primarily incurred by B, and is not legally binding on A, unless made in writing, as the oral assumption of the obligation of another is not binding. The practical application of this important distinction is obvious. When professional services are rendered at the request of a third party from whom the physician expects to secure his compensation, either such agreements should be in writing or it should be plainly understood that the third party assumes the direct primary liability for the services rendered.

## Medical News

### DELAWARE

**State Society Meeting.**—The 122nd annual meeting of the Delaware Medical Society was held in Lewes, October 9-10, and the following officers were elected: president, Dr. Frank L. Springer, Newport; vice-presidents, Drs. Roland G. Paynter, Georgetown, and James L. Crossmore, Wyoming; secretary, Dr. George W. K. Forrest, Wilmington (reelected); treasurer, Dr. Samuel C. Rumford, Wilmington; councilor, Dr. James Beebe, Lewes; trustee of the *Delaware State Medical Journal*, Dr. George Frank Jones, Georgetown; editor, Dr. Albert Robin, Wilmington; delegate to the American Medical Association, Dr. Hiram R. Burton, Lewes, and alternate, Dr. Luther S. Conwell, Camden. Wilmington is the next meeting-place.

1. Page 1478

### IDAHO

**State Medical Association Meeting.**—The Idaho State Medical Association held its ninth annual meeting in Boise, October 11-13, under the presidency of Dr. John W. Givens, Orofino, and elected the following officers: president, Dr. William F. Howard, Pocatello, and secretary-treasurer, Dr. Edward E. Maxey, Boise (reelected). The association pledged itself to work for the establishment of a state sanatorium for the treatment of tuberculosis, and for medical inspection in the public schools. The next meeting of the association will be held at Portland, where it will meet with the state associations of Oregon and Washington, under the head of the Northwest Tri-Medical Association.

### ILLINOIS

**Personal.**—Dr. Nathaniel T. Stevens has been appointed local surgeon of the Illinois Central System at Clifton.——Dr. Frank R. Pitner, Clay City, said to the the oldest practitioner of Illinois, celebrated his 99th birthday anniversary, October 16.

#### Chicago

**Tag Day.**—The annual "Tag Day" for children, October 16, resulted in contributions of $60,000, which is to be divided among the various hospitals and institutions for children of the city.

**Personal.**—Dr. Max Thorek has been appointed a member of the consulting staff of Cook County Hospital.——Dr. Mary B. White has been appointed a member of the Board of Visitors of County Institutions.

**Surgical Society Election.**—At the annual meeting of the Chicago Surgical Society, October 20, Dr. Frederick A. Besley was elected president; Dr. Samuel C. Plummer, vice-president; Dr. Allan B. Kanavel, secretary, and Dr. Dean D. Lewis, treasurer.

**Favors Sanitarium Plans.**—Informal approval of the plans for the municipal tuberculosis sanitarium was voted by the city council committee on finance, October 13. The cost of the proposed group, including lighting and sewerage, is estimated at $818,000. This will provide for 350 patients and administrative facilities. The intention is evidently to accommodate 500 patients. A site has already been purchased by the city at a cost of $158,000.

### IOWA

**Southeastern Physicians to Meet.**—The thirty-sixth annual meeting of the Southeastern Iowa Medical Society will be held in Washington, November 16, under the presidency of Dr. Clyde A. Boice, Washington.

**Drake Alumni Clinic.**—The Drake Medical Alumni Association, by a special committee, is arranging for a special two-day clinic to be held at the university in Des Moines next spring. The committee consists of Drs. Charles F. Smith, Wilbur S. Conkling, Robert P. Parriot, Elmer B. Mountain, Des Moines, and Dr. George F. Jenkins, Keokuk. Invitations are to be sent to all the alumni, and the aim is to make it a brief, practical course in surgery, medicine and laboratory work.

**Personal.**—Dr. Charles E. Ruth, who recently returned from Ponce, Porto Rico, has located in Des Moines.——Dr. Albert A. Anderson, Des Moines, is reported to be seriously ill with septicemia due to a wound of the right hand.——Dr. John V. Littig has been appointed medical inspector of the public schools of Davenport.——Dr. Charles H. French, Cedar Rapids, is reported to be seriously ill with septicemia in St. Luke's Hospital.——Dr. Robert H. Sutton, Shenandoah, was recently presented with a gold-headed cane by the Page County Medical Association, on the occasion of the fiftieth anniversary of his entrance into medical practice.

### MARYLAND

#### Baltimore

**Medical Faculty Meeting.**—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland was held at Baltimore, October 20. The principal address was delivered by Dr. Harvey W. Wiley. There were clinics and luncheons at the various hospitals and demonstrations at the Pasteur Institute. Dr. William H. Welch announced that Dr. Oliven of Germany was in Baltimore making arrangements for a large delegation of German physicians, who are coming to America to attend the International Congress of Hygiene and Demography in Washington, September, 1912. They are to

be entertained in Baltimore before going to Washington. A report was submitted, favoring the establishment of a state colony to which alcoholic patients may be committed directly, without the necessity of criminal proceedings.

**Typhoid Vaccination at Johns Hopkins Hospital.**—Johns Hopkins Hospital is offering to its doctors, nurses, students and employees, the privilege of being vaccinated against typhoid fever, and many are availing themselves of the opportunity.

**Personal.**—Dr. William H. Welch has consented to open the bazar for the Home of Orphans and Widows of Physicians, November 1.——Dr. Edward C. Bubert is reported to be ill at his home.——Dr. Rupert Norton has been elected president of Johns Hopkins Hospital Medical Society.——Dr. James A. Fechtig is convalescent after an operation for appendicitis.

## MASSACHUSETTS

**Decision Against Health Board.**—Judge brown of the Superior Criminal Court at Salem is said to have rendered a decision October 18 that a city board of health has no power to make and enforce a rule that fruit exposed for sale shall be covered from the dust.

**Ask Walcott's Reappointment.**—More than 2,000 signatures of physicians were on the petition which Dr. Frederick C. Shattuck, Boston, presented to Governor Foss, October 13, asking for the reappointment of Dr. Henry P. Walcott, Cambridge, on the Metropolitan Water and Sewerage Commission. Dr. Walcott, whose term expired on March 20 last, has been a member of the commission since its establishment in 1895, and chairman of the State Board of Health since 1886.

**Ether Day.**—Ether day was observed October 16 at the Massachusetts General Hospital in Boston by the usual clinics and luncheon. In the afternoon Dr. Simon Flexner gave an address on "The Biologic Basis of Specific Therapy." The alumni met for a banquet in the evening and were addressed by Drs. Simon Flexner, New York City; Charles F. Stokes, Surgeon-General U. S. Army, and Harvey Cushing, Baltimore, who is to be in charge of the surgical side of the new Peter Bent Brigham Hospital, now in process of construction.

**Medical Library Meetings.**—The Medical Library Meetings, which are under the joint supervision of the officers of the Suffolk District Medical Society, those of the Medical Section and those of the Surgical Section of the same society, and of a committee of the Boston Medical Library, were resumed October 28. The subject for discussion at the first meeting is "The Recent Epidemic of Septic Sore-Throat." It will be discussed by Prof. C. E. A. Winslow, of New York; Drs. Mark W. Richardson, Samuel H. Durgin, Joseph L. Goodale and Richard M. Smith, Boston; Dr. Eugene A. Darling, Cambridge, and Dr. H. Lincoln Chase, Brookline. Hereafter these meetings will be held on the first and third Wednesday evenings of each month, beginning November 15. The topic for that date is "Pathology and Medical Treatment of Exophthalmic Goiter," by Dr. Charles F. Hoover of Cleveland, O., with discussion by Dr. Charles H. Mayo and others.

## MICHIGAN

**Maternity Hospital Licensed.**—The board of health of Grand Rapids has voted to grant a license to the United Brothers Association Hospital, to operate a maternity hospital in conformity with the new state law.

**Antituberculosis Society Issues Circular.**—The Hastings Antituberculosis Society has issued an attractive circular giving valuable information concerning the care of persons suffering from tuberculosis, the means of preventing the spread of the disease and its cure.

**New Wing of Hospital Open.**—The new wing of Grace Hospital, Detroit, was open for inspection, October 2. The new building is fireproof and is equipped with most modern appliances. Dr. Harold Wilson has established a private surgical clinic at the hospital, for the operative treatment of diseases of the eye, ear, nose and throat.

**Additional Medical Officers Commissioned.**—The state military board is taking action to reorganize the medical department of the National Guard to conform to the federal regulations. The board recommended the following officers for commissions as first lieutenants in the medical corps: Howard A. Grube, Grand Rapids; George H. Townsend, Jackson; Floyd A. Roberts, Flint; Alfred E. Lemon, Sault Ste. Marie, and Lewis S. Ramsdell, Manistee.

**Whooping-Cough Dangerous to Children.**—Calhoun County Medical Society, at its recent meeting at Marshall, adopted resolutions setting forth that pertussis is one of the most fatal of the contagious diseases of childhood, and expressing the desire that through the efforts of the board of health and health officers, the public may be better instructed as to the dangers of this disease, that it may be reported, and that stringent quarantine regulations may be enforced.

**Personal.**—A banquet was given by the Manistee County Medical Society, October 6, in honor of Dr. Jens A. Christensen, who was about to leave Manistee to practice in Chicago.——Dr. William A. Spitzley, Detroit, has returned from Europe.——Dr. John E. Clark, Detroit, chemist of Wayne County, was thrown from his motor car in a collision with another automobile, and sustained a severe scalp wound.——Dr. and Mrs. Harry A. Haze, Lansing, have returned from Europe.——Dr. Zell L. Baldwin, Niles, has taken charge of the antituberculosis hospital at Kalamazoo.

## NEBRASKA

**Personal.**—Dr. Susan La Flesche-Picotte, Walthill, is reported to be seriously ill as the result of overwork.——Dr. James W. Miller has been appointed surgeon of the Union Pacific system at Gibbon.——Dr. Albon E. Bartoo has disposed of his interests in Arcadia and will move to Brazil, South America.——Dr. John B. Fulton, Beatrice, sustained serious injuries in a fall down a stairway at his home, October 5.——Dr. Anders P. Overgaard, Fremont, was seriously injured by a fall on a cement floor, October 4.——Dr. Henry G. Leisenring, Wayne, has sold his practice and will move to San Diego, Cal.——Dr. Gustav W. Dishong, assistant superintendent of the Norfolk Insane Hospital, has been appointed superintendent of the Lincoln Insane Hospital, vice Dr. John T. Hay, deceased.

## NEW JERSEY

**Personal.**—Dr. William Edgar Darnall, Atlantic City, has been appointed consulting surgeon to the North American Children's Sanitarium for the Treatment of Surgical Tuberculosis, Atlantic City.

**Society Meeting.**—The New Jersey State Pediatric Society at its meeting, October 28, held in Lakewood, N. J., held a symposium on "The Welfare of Young Children from the Educational Standpoint," at which Henry E. Jenkins, New York City, district superintendent of schools, discussed "The School and the Doctor;" Prof. Howard C. Warren, Princeton University, "The Home Schools for Infants at Rome;" E. R. Johnstone, superintendent of the New Jersey Training School for Feeble-Minded Girls and Boys, Vineland, "The Care and Training of Feeble-Minded Children;" and Dr. David F. Weeks, superintendent New Jersey State Village for Epileptics, Skillman, "What New Jersey is Doing for the Epileptic."

## NEW YORK

**Personal.**—Dr. Alonzo B. Foster, Fonda, has been appointed coroner of Montgomery County, vice Dr. Cornelius W. De Baun, deceased.——Dr. William Charles Willis, Patchogue, is said to have been committed to the State Hospital for the Insane, Central Islip, October 15.

**To Warn Children Against Accidents.**—The trolley men of the state are perfecting plans to educate children as to the danger of accidents. With the cooperation of teachers and parents, personal talk, pamphlets of warning information and danger signs calculated to impress boys and girls are to be presented in school room, home and playground throughout the state. On blotters and other attractive souvenirs have been printed such maxims as "Don't hitch to a car, touch loose wires, play on tracks, jump off until the car stops, cross tracks till you look, or send your little brother or sister alone." Recent reports of the public service commission show that accident damages have cost the street railways of the state almost $5,000,000 in one year. Superintendent Maxwell of New York City has sent circulars to the public schools requesting that instructions be given the pupils in regard to the serious evil of jumping on the tail end of street cars, wagons and other vehicles. The principals were also asked to instruct children how to get on and off street cars safely and how to cross the street where vehicular traffic is heavy. In twenty-one months there have been 239 children killed in street accidents in Greater New York.

**District Society Meetings.**—At the fifth annual meeting of the First District Branch of the Medical Society of the State of New York, held in Yonkers, October 12, Dr. Daniel Bailey

Hardenbergh, Middletown, was elected president; Dr. John Calhoun Otis, Poughkeepsie, vice-president; Dr. Charles Ellery Denison, New York City, secretary, and Dr. George Swan Mooney, Yonkers, treasurer.——The Fifth District Branch of the Medical Society of the State of New York held its annual meeting in Utica, October 5, and elected the following officers: president, Dr. James K. Stockwell, Oswego; vice-president, Dr. Amos P. Dodge, Oneida; secretary, Dr. Frederick Flaherty, Syracuse, and treasurer, Dr. Henry A. Hoyt, Watertown.——The annual meeting of the Sixth District Branch of the Medical Society of the State of New York was held in Elmira, October 17. Dr. Frederick M. Miller, Binghamton, was elected president; Dr. Herbert W. Fudge, Elmira, vice-president, and Dr. Luzerne Coville, Ithaca, secretary and treasurer. It was decided to hold the 1912 meeting in Binghamton.——The fifth annual meeting of the Fourth District Branch of the Medical Society of the State of New York was held in Ogdensburg. Dr. Frederick G. Fielding, Glens Falls, was elected president; Dr. Silas J. Banker, Fort Edwards, vice-president; Dr. Frederick K. Resseguie, Saratoga Springs, secretary, and Dr. George H. Oliver, Malone, treasurer. Glens Falls was selected as the next place of meeting.

### New York City

**Harvey Lecture.**—Professor Max Verworn, University of Bonn, delivers the third of the present course of lectures at the New York Academy of Medicine on Saturday evening, October 28, at 8:30, on "Narcosis."

**Inoculate Militiamen Against Typhoid.**—Preparations are being made to inoculate every man in the Seventy-First Infantry, N. G., N. Y., in order to prevent typhoid fever at the encampment next summer. This is the first volunteer regiment to submit to inoculation against typhoid fever.

**Personal.**—Dr. Stephen Smith has been elected president of the New York State Conference of Charities and Corrections.——Dr. William L. Gahagan, medical director of the United States Casualty Company, has resigned to accept the superintendency of the personal accident and health insurance department of the Globe Indemnity Company.

**Deaths of the Quarter.**—During the three months ended September 30 there were 18,048 deaths reported, equivalent to a death-rate of 14.38 per 1,000, a decrease of 1.15 as compared with the corresponding quarter of last year. The chief decrease was shown in diarrheal diseases of children under 5 years of age, nephritis, pneumonia, congenital debility and tuberculosis of the lungs.

**Hospital Addition Opened.**—The annual meeting of the Society of St. Luke's Hospital on October 18 was preceded by the formal opening of the Travers Pavilion, the erection of which was made possible by the will of Mrs. Mary Travers Heckscher which gave $250,000 for this purpose. This addition is a ten-story building, the two upper stories of which have arrangements for open-air treatment of patients.

**Anesthetists Meet.**—The meeting of the anesthetists of New York City and vicinity, held at 40 East Forty-First Street, Manhattan, October 28, consisted of a dinner at 6 p. m., a business session of the Long Island Society of Anesthetists for reorganization, addresses on "The Anesthetic Situation in New York," by Dr. Alfred M. Hellman and on "Personal Reminiscences and Experiences of Ten Years of Anesthetic Work," by Dr. Freeman Allen, of the Massachusetts General Hospital, at the conclusion of which the society adjourned to attend the Harvey Society lecture on "Narcosis."

**Call to Fight Rabies.**—The large number of persons bitten by dogs and the increase in frequency of rabies has called forth a bulletin from the department of health setting forth the urgent need of taking measures to combat present conditions. According to figures compiled by the department of health, 2,462 persons were bitten by dogs in this city from January 1 to September 1 this year, and of these, 1,743 were children. Examination of the animals killed showed six rabid cats and 192 rabid dogs. The net result was seven fatal cases of human rabies. The department of health calls for the immediate passage and the rigid enforcement of an ordinance requiring that dogs at large be either muzzled or leashed. The department also advises a campaign of educational measures in regard to the care and observation of dogs by their owners. It is thought that an adequate system of licensing by the municipal authorities might have a beneficial effect and the city of New York seems to be about the only city in which the licensing of dogs is not a function of the municipal government.

### NORTH CAROLINA

**Personal.**—Dr. and Mrs. Charles L. Summers, Winston-Salem, will sail for Europe early next month.——Dr. Baxter S. Moore, Charlotte, will remove to Atlanta, Ga., November 1.

**New Infirmary.**—The executive board of the trustees of the State Hospital for Tuberculosis, Montrose, at its recent meeting in High Point, awarded the contract for the erection of a new infirmary to afford accommodation for fifty additional patients.

**Courses in Sanitation at Trinity.**—Trinity College, Durham, with the cooperation of its department of biology and the faculty committee on health, has arranged demonstrations and courses of instruction for its students, in the fundamentals of sanitary science, which for several years physicians urged should be an essential part of a complete modern college course.

### PENNSYLVANIA

**Examination of Public School Children.**—Medical examination of the Lebanon public school children has been decided on, to assist in stamping out diphtheria.

**Personal.**—Dr. D. Walter Straub, Bethlehem, is reported to be seriously ill with septicemia.——Drs. Thomas A. Monahan, Shenandoah, and John L. Adams, Asheville, N. C., have been appointed assistant surgeons at Fountain Springs Hospital.

**Conference of Secretaries.**—The conference of the secretaries of the component county societies of the Medical Society of the State of Pennsylvania was held in Harrisburg, September 26, Dr. John J. Coffman, Scotland, presiding. After the completion of the literary program the members were entertained at a dinner given by the state medical society, at which Dr. Thomas S. Blair, Harrisburg, was toastmaster. Dr. Luther B. Kline, Catawissa, was elected chairman and Dr. Clarence E. Shaw, Williamsport, was reelected secretary-treasurer.

**Pavilion for Sick Children.**—On October 22, a pavilion for the treatment of indigent consumptive children was dedicated at the Philadelphia Jewish Sanitarium, Eagleville, Montgomery County, an institution devoted exclusively to the free treatment of tuberculosis. The pavilion has accommodations for sixteen children as well as facilities for their education. Only children in the incipient stages of the disease will be accepted. This institution was started more than two years ago and has discharged 130 patients as cured. It now has seventy-five patients and a waiting list of nearly 150.

### Philadelphia

**Club Reception to Clinicians.**—The next reception of the Medical Club of Philadelphia will be held November 17, at which Dr. Albert J. Ochsner, Chicago, the president of the Congress of Surgeons of North America, and the president-elect will be the guests of honor.

**Election in New Society.**—The Philadelphia Laryngological Society, recently organized and whose first meeting was held October 25, has chosen the following officers: president, Dr. Ross H. Skillern; vice-president, Dr. George W. Mackenzie, and secretary and treasurer, Dr. Charles A. O'Reily.

**Personal.**—Dr. Alexander W. Biddle is recovering from the effects of a slight operation performed at the Pennsylvania Hospital.——Dr. Louis Starr sailed October 18 to spend the winter in Europe.——Dr. Charles Lincoln Furbush has returned from Europe.——Dr. Louis O. Heiland has been appointed secretary to the board of directors of Girard College.

**Municipal Dental Laboratory.**—Bids have been opened by the director of public health and charities for the equipment of a dental laboratory in city hall; drugs, medicines, surgical instruments and supplies and for the purchase and installation of a modern *x*-ray apparatus. The department has $1,700 for dental supplies; it has $5,922.75 for a new *x*-ray machine at Blockley and has $120 for drugs.

**War on Fake Doctors.**—War on fake doctors who are swarming here from "physical culture" schools in other cities is to be opened by the Philadelphia County Medical Society. At the meeting of the society October 16, a resolution was passed, providing for action at the second meeting in November toward joining forces with the district attorney in the campaign to compel the so-called "mechanotherapists" and others to discontinue the practice of medicine. These questionable commercial characters, pretending at first to give treatments only under physicians' orders, soon blossom out as doctors, thus evading the statutes on the practice of medicine.

## GENERAL AND FOREIGN

**Railway Surgeons Hold Meeting.**—At the annual meeting of the American Association of Railway Surgeons, held in Chicago October 18-20, the following officers were elected: president, Dr. Rhett Goode, Mobile, Ala.; vice-presidents, Drs. Arthur M. Hume, Owosso, Mich.; Robert A. Kerr, Peoria, Ill.; and Henry H. Clark, McGregor, Ia.; secretary-editor, Dr. Louis J. Mitchell, Chicago (reelected), and treasurer, Dr. Henry B. Jennings, Council Bluffs, Ia.

**Meeting of Soo Line Surgeons.**—The Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association held its fifth annual meeting in Chicago October 16-17, under the presidency of Dr. Albert E. Halstead, Chicago, Ill. The following officers were elected: president, Dr. Charles A. Stewart, Duluth, Minn.; vice-president, Dr. H. Jefferson O'Brien, Superior, Wis.; and secretary-treasurer, Dr. John H. Rishmiller, Minneapolis, Minn. (reelected). The next annual meeting will be held in August, 1912, in Duluth.

**Honorary Degrees Conferred on Physicians.**—At exercises attending the five-hundredth anniversary of the foundation of the University of St. Andrews, Scotland, the honorary degree of LL.D. was conferred on eighty-six eminent men, of whom the following were members of the medical profession: Sir Thomas Clifford Allbutt, regius professor of physic in the University of Cambridge; Sir Thomas Barlow, professor of clinical medicine, University College, London; George Andreas Berry, president of the Royal College of Surgeons, Edinburgh, and of the Ophthalmological Society of the United Kingdom; Byrom Bramwell, president of the Royal College of Physicians, Edinburgh; Robert Bridges, physician, critic and poet; Alexander Crum Brown, formerly president of the Chemical Society, chemist and physiologist; Sir Hector Clare Cameron, formerly president of the Faculty of Physicians and Surgeons, Glasgow; Francis Gotch, Waynflete professor of physiology in the University of Oxford; Peter Fredrik Holst, Christiania, president of the Norwegian Institute for Medical Science; William Williams Keen, Philadelphia, president of the American Philosophical Society; Hector Lebouecq, professor of anatomy, and dean of the Faculty of Medicine in the University of Ghent; Charles Sedgwick Minot, Boston, professor of histology and embryology in Harvard Medical School and secretary of the Elizabeth Thompson Original Research Fund; Rutger Adolf Reodingius, rector and professor of pathologic anatomy in the Univers..y of Groningen; Robert Saundby, president of the British Medical Association and professor of medicine in the University of Birmingham; Edward Albert Schäfer, professor of physiology in the University of Edinburgh and president-elect of the British Association, and Johannes Veit, professor of obstetrics and gynecology, and rector of the University of Halle-Wittenberg.

## LONDON LETTER

*(From Our Regular Correspondent)*

LONDON, Oct. 14, 1911.

### Death of John Hughlings Jackson

John Hughlings Jackson, M.D., F.R.C.P., LL.D., D.Sc., F.R.S., consulting physician to the London Hospital and the National Hospital for the Paralyzed and Epileptic, died at his residence in London at the age of 76. Born in Yorkshire, he studied medicine at St. Bartholomew's Hospital, London, and graduated at the Scotch University of St. Andrews. In 1859, largely through the introduction of Sir Jonathan Hutchinson, another Yorkshireman, who was also a schoolfellow, he was appointed lecturer on pathology at the London Hospital. He entertained the idea of pursuing a literary career and giving up medicine but was persuaded not to do so by Sir Jonathan Hutchinson, who afterward described Jackson as his "greatest discovery." In 1864 he was appointed assistant physician to the London Hospital and lecturer on physiology. In company with J. S. Ramskill and C. B. Radcliffe he founded the National Hospital for the Paralyzed and Epileptic, the home of the English school of neurology, of which he has been well described as the father. His contributions to neurology were both numerous and important. An incomplete index to his publications from 1861 to 1894 reached the extraordinary total of 202. His work on aphasia and convulsions and his description of the form of the latter to which his name has been given may be particularly mentioned, but there was scarcely a problem in the whole field of neurology that was not illuminated by his genius. With the other eminent neurologists he may be described as a great clinician, but he differed from them all in one respect: he united the speculations of the philosopher to the facts observed at the bedside. A pupil of Herbert Spencer, he applied this philosopher's doctrines of evolution to neurology. He showed how brain disease conformed to the law of "dissolution" formulated by Spencer. Reasoning in this deductive fashion he postulated the existence of three levels of nerve-centers according to their position in evolution. He showed how the phenomena of brain disease conformed to the law of dissolution in affecting first the highest centers, then the middle centers and finally the lowest. By thus combining philosophical speculation with clinical observation he achieved unparalleled success and anticipated many of the discoveries of the experimental methods. Thus in his "Study of Convulsions" he postulated the existence of a motor area in the cortex, of centers in that area, and their arrangement—a speculation subsequently confirmed by the experiments of Fritsch, Hitzig and Ferrier.

### The Royal Commission on Tuberculosis

The final report of the Royal Commission on Tuberculosis has been reviewed in a previous letter (THE JOURNAL, Aug. 5, 1911, p. 491). The first two of the extensive appendixes have just been published containing complete details of the experiments and observations and calling for some further notice. They are very valuable because of the minute accuracy and detail with which a long series of experiments has been described. To determine the character of the bacilli active in the production of tuberculosis in man, cultures from fifty-four cases representative of all the common types, except lupus, were used. In the cases of generalized tuberculosis caused by bacilli admitted through the alimentary tract, cultures were isolated, not only from the glands nearest the point of entry, but also from distant lesions. In two cases, human and bovine bacilli were isolated from the same patient, but in the other cases, the bacilli were either distinctly bovine, growing with difficulty in artificial media and of high virulence, or human, growing luxuriantly and of low virulence for the rabbit, but of much lower virulence for the calf than the bovine type. Bovine bacilli were isolated from four out of ten cases of alimentary tuberculosis in children and from two cases of pulmonary tuberculosis. Four children died as a result of infection with bovine tubercle bacilli, the cause of death in one case being general tuberculosis; in the second, tuberculous meningitis; in the third, tuberculous peritonitis, and in the fourth, stricture of the intestines following tuberculous ulceration. The two pulmonary cases occurred in adults, aged 21 and 31 years, respectively.

The question of a possible modification of the bacilli from the human to the bovine type or vice versa as a consequence of residence in the human or animal body was discussed. The bovine type in man was obtained almost solely from children, in whom it had presumably entered through the alimentary canal. The disease produced varied in severity. In the majority of cases it was fatal; in the remainder, it was apparently limited to the cervical glands or was found in children who had died from other causes. Considering the many opportunities which the bovine bacillus has for entering the human body there must be many children who survive the invasion. What then is the fate of the invaders? As bovine bacilli are rarely found in the tuberculosis of adults, they must either be eventually killed or changed into bacilli of the human type. To prove the latter is very difficult. The problem has been attacked by the investigation of many different strains of tubercle bacilli from human lesions with a view to ascertaining whether there exist types intermediate between the human and the bovine, and also by the passage of various strains of tubercle bacilli through different species of animals to determine whether the properties (with regard to culture and virulence) are stable or capable of being altered. The general result of these experiments lends no support to the view that human bacilli can be changed into bovine bacilli by passage through calves or other mammals.

In a case of lupus a culture was isolated which differed from all other human bacilli grown from human tuberculosis. It possessed the cultural characters of a bovine bacillus but had a relatively low virulence for the calf. This led to an investigation to determine whether the bacilli of lupus were different from the bacilli of other forms of human tuberculosis. The general result was that cultures from lupus fall into one or other of the two main divisions of bacilli (human and bovine) as far as their cultural characters are concerned. But few possess the degree of virulence which these characters would indicate. It was thought that some of the cultures might be bovine bacilli which had become attenuated in virulence either before their entry into the human body or as a result of residence therein. Exhaustive experiments, however, showed that the lupus type cannot be regarded as intermediate between the bovine and human types but seems to be a degenerate form of the human type.

## PARIS LETTER

*(From Our Regular Correspondent)*

PARIS, Oct. 6, 1911.

### The Death of M. Troost and the Candidacy of Mme. Curie for the Academy of Science

M. Louis-Joseph Troost, member of the Académie des sciences since 1884, at which time he succeeded Wurtz, has just died, aged 85, and in consequence the question of the entry of women to the institute has been raised again. Many members of the academy are wondering if Mme. Curie would once more become a candidate. It is certain that she would now have the greatest chance of being admitted. The principal argument against her last year was the high merit of M. Branly, who is now a member of the institute. Mme. Curie would, therefore, probably have a majority of votes. It is inevitable that there would be some opposition, since many members of the academy have an intense horror of feminism, but these devotees of tradition would not be able to sway the final results.

### The Consumption of Brandy

Dr. Jacques Bertillon, *chef des travaux de la statistique municipale de la ville de Paris*, has just presented to the Académie des sciences morales et politiques, an analysis showing the consumption of brandy in thirty-three large French cities. It appears that in all the consumption of brandy has diminished considerably since 1900-1901, that is to say, since the law of Dec. 29, 1897, reducing the tax on wine and beer and increasing considerably the taxes on distilled liquors. Formerly the consumption of brandy was almost the same in all the groups of cities, that is to say, from 7 to 8 liters of alcohol per year per inhabitant. It was only 2.84 liters in the country. Since 1901 it has fallen to 6 liters in small cities of 4,000 to 10,000 inhabitants, to less than that in the cities a little larger, and to a still smaller figure (4.23 liters) in the cities of more than 50,000 inhabitants. The diminution has been great, therefore, in the large cities; there has been no decrease in the country. The consumption of wine, meanwhile, has increased.

### Scarcity of Milk in Paris

For some time Paris has been suffering from a scarcity of milk, which tends to become chronic, since the demand for milk in Paris amounts to 1,100,000 quarts per day, and no more than 900,000 quarts are received. It is in vain that the large milk companies have trebled the extent of territory from which they draw milk, and to-day go as far as 180 miles (300 kilometers) to obtain what they formerly obtained at 60 miles at the maximum. This insufficiency of production is due to three principal causes: the drought which has dried up the pastures; foot-and-mouth disease, which has decreased the herds, and the higher prices and smaller numbers of the dairy employees. Although the situation is not alarming for the hospitals, milk being furnished for the Public Charities by contract, it is rather disturbing for the general population. The prefect of police has accordingly interviewed the presidents of the dairy companies. Measures have been taken so that infants, sick persons and the aged shall not feel the effect of price. In all the dairies a notice has been posted requesting persons having young children or sick persons or old persons in the family to indicate the quantity of milk which is necessary for them in order that it may be reserved each day.

### Measures Against Depopulation

The commission on depopulation has just terminated its labor by the adoption of the general report of its president, M. Paul Strauss, senator. Crimes against infants, more particularly infanticide, have, in our day, taken the most hypocritical and refined form, being encouraged by a doctrinal and practical propaganda. Judicial repression is altogether insufficient. Thus in 1906, out of 736 cases of concealed childbirth, 713 infants were abandoned. The commission adopted the resolution of the Ligue de la mortalité infantile, calling for a strict oversight of midwives and lying-in homes and a rigid repression of the neomalthusian propaganda by lectures, tracts, etc. They recommended, on the other hand, the encouragement of maternity by all possible means before and after birth. It is necessary to avoid overwork which exercises a bad effect on the woman and to combat the ignorance which has a large share of the responsibility for preventable accidents. The secret lying-in homes shelter future mothers who wish to hide their fault at any cost and also the *déracinées* and vagabonds. Some form of charity or mutual assistance is necessary to protect the future mother. Stations of observation are indispensable in our popular centers to insure physiologic preparation for maternity. After the accouchement a respite from work of at least four weeks is imperiously demanded. The bill now before the senate, after having been unanimously passed by the Chamber of Deputies, ought to be passed without delay. During the period of accouchement and afterward, the combat against ignorance demands especial vigilance. The infant consultation is the instrument best adapted for educating mothers and keeping the medical control of infants.

After having examined the question of children aided in various ways, M. Paul Strauss has studied the sanitary protection of children aged 1 to 14 years, and of adults. For the former he especially recommends the institution of the sanitary school record (*casier sanitaire scolaire*), such as is used in Geneva, with continued oversight and intelligent education from the point of view of hygiene and preventive medicine. School lunches, vacation colonies, stations for convalescents, should be used in the struggle against transmissible diseases, tuberculosis and degeneration.

M. Strauss showed that according to the tables drawn up for the period extending from 1898 to 1903 by M. Lucien March, head of the general statistics of France, out of 1,000 new-born infants the following number survived to one year in the countries named respectively:

| | |
|---|---|
| France | 8.435 |
| England | 8.691 |
| Denmark | 8.799 |
| Belgium | 8.880 |
| Sweden | 9.079 |

## BERLIN LETTER

*(From Our Regular Correspondent)*

BERLIN, Oct. 5, 1911.

### Personals

September 28, Professor v. Michel, director of the Berlin University eye clinic, died at the age of 68. When some lay and medical journals about two months ago published the news that he intended to resign his position at the end of the winter semester, he contradicted it with the statement that he had not thought of leaving his service. Now, however, death has contradicted his assertion. Michel died from contracting kidney and tuberculosis. He was an excellent investigator and teacher, who had enriched his specialty with a number of works. His text-book also received a considerable circulation through several editions.

As a result of the removal of Professor Killian to Berlin, privat-docent Dr. Marx has provisionally undertaken the direction of the Freiburg laryngologic clinic.

### Closing of Bilz's Quack Hospital

The renowned quack Bilz who by his vast advertising has circulated by the hundred thousands a "Nature Cure Book" (*Naturheilbuch*) published under his name, but surely prepared by some one else, has been deprived by the authorities of the concession for the maintenance of his institution located at Niederlösnitz near Dresden, on account of the objections raised on hygienic and moral grounds against the conditions existing there.

### The Meeting of the German Society for the Advancement of Science

The annual *Naturforscher* congress was held this year at Carlsruhe, as usual in the latter part of September. The attendance was not so large as at previous meetings, in spite of the fact that the program of addresses and entertainments was very inviting. In the medical section a number of important subjects were treated. The pathology and therapy of exophthalmic goiter was discussed by Professor Gottlieb of Heidelberg from the pharmacologic standpoint, by Professor Simmonds, as a pathologic anatomist, by Professor Starck of Carlsruhe, as an internist from the clinical standpoint, diagnosis and therapy, and by Professor Rehn of Frankfurt a. M., with reference to the operative results. The Freiburg professors Aschoff, Krönig, de la Camp and Professor v. Beck, the surgeon of Carlsruhe, delivered addresses on thrombosis and embolism. Professor Biedl of Vienna, and Professor Morawitz of Freiburg reviewed the subject of internal secretions.

#### EHRLICH ON SALVARSAN

Great interest was naturally aroused by the address of Ehrlich on salvarsan, which I would like to report to your readers in detail. Ehrlich first addressed himself to a criticism of the publications regarding the injurious effects of salvarsan. He

said that it was easy to show that certain injurious effects which were at first laid to salvarsan, were in fact due to other agencies. Thus the bladder disturbances depended on the use of a product that had become poisonous on account of oxidation. The same was true of other accidents. In regard to the numerous side-effects which had appeared, such as fever, headache, vomiting and diarrhea, and which occasionally assumed a serious character, Wechselmann first pointed out that these phenomena must be connected with the bacterial content of the distilled water used for solutions and showed that these practically disappeared with the use of an absolutely fresh distilled water. This peculiar phenomenon is explained by Ehrlich by the supposition that under the influence of bacteria the body cells acquire an increased sensitiveness to arsenic. This circumstance must influence the process of sterilization unfavorably, aside from the fact that the febrile reaction, when it is severe, may exercise a fatal influence on weak individuals with disease of important organs. Further Ehrlich maintains that it is possible that under such a reaction to the endotoxins, disease processes will be favored and that even the symptoms referable to the cranial nerves are connected with this fact.

#### NEURORECURRENCES AFTER SALVARSAN

In no other way can be explained the fact that in certain clinics, as for instance that of Finger in Vienna, such neurorecurrences are unusually frequent. Independently of this we must consider the possibility that such a stormy reaction injures the cells so as to make them supersensitive to a second injection of salvarsan. Other by-effects which have played a great rôle are those affecting the nervous system. Among these we must distinguish two groups, those occurring within a short time after the injection and those which appear later, from two weeks to one, three, or rarely four months. The first type of quickly appearing functional nerve disturbances are explained most simply by supposing that after the destruction of the spirochetes, a swelling of the affected part sets in, such as may be observed as Herxheimer's reaction in the skin under salvarsan treatment. But in a narrow bony canal such a reaction will not run so harmless a course but will cause pressure on the nerves. More important is the group of nerve symptoms, called nervous relapses or neurorecurrences, which were originally attributed to poisoning by arsenic. Dr. Benario has compared 194 nervous relapses under salvarsan treatment with 122 cases under mercurial treatment, and he was able to establish the fact that under the latter treatment the same affections, e. g. those of the auditory nerve, occur under like conditions. From this Ehrlich concludes that the opinion that nervous relapses under mercurial treatment are rare is not correct. In certain clinics an unusual number of nervous relapses under salvarsan have occurred. On the other hand in certain localities, in especially large clinics, they are practically unknown. After a thorough discussion of the factors that indicate that in these nervous relapses we have to do with the propagation of the few spirochetes which have survived, and not with an injury to the nerves, Ehrlich continues: "The cause of the nervous relapses is to be referred to the fact that almost the entire number of syphilis germs in the body have been destroyed and only isolated spirochetes remain alive. We have to do with a sterilization that is almost complete. These few germs are placed under better life conditions because their competitors have been expelled. Since from anatomic reasons the action of salvarsan is more difficult in the nervous tissues, most of the residuary spirochetes are found here and come therefore most markedly and earliest into evidence."

#### FATALITIES

As regards the fatal cases in connection with salvarsan, Ehrlich remarks that we have to do with a large number of treated cases and a small number of these cases are patients in whom salvarsan was tried as a remedy of last resort. When we consider that in the course of the last year several hundred thousand patients have been treated with salvarsan, the number of accidents is so small as to give no occasion for any serious objection. It may be affirmed that salvarsan has been shown by the experiences of the last year to be a relatively harmless substance. We have seen that the acute reaction to it is due to a lack in technic.

#### TREATMENT BY A SINGLE LARGE DOSE

Ehrlich then discusses the principle of treatment by *sterilisatio magna*. In numerous experiments the undoubted cure of severely affected animals has thus been achieved. In Russia it has been shown by wholesale experiments in spirillosis of hens and geese, that salvarsan is able: 1. to cure a severely affected animal permanently by a single injection. 2. Salvarsan has shown itself to be a really wonderful means of sterilization in relapsing fever in Russia, Spain, and the Congo. A single injection is sufficient to free the patient at once from the parasites and lead to a permanent cure. 3. The results in frambesia are quite as brilliant. In Surinam in all 900 frambesia patients were treated and of these only three relapsed. In the frambesia hospital in Surinam 828 frambesia patients were treated within a week. Two weeks later the last patient was in a condition to be discharged from the hospital and thus in the history of medicine this was the only instance in which the hospital could be closed. 4. In tertian malaria salvarsan achieves a remarkably curative effect. 5. Bilharzia seems to be sterilized by a single injection. 6. From extensive trials an injection of 30 gm. of salvarsan effects a cure in the murrain of horses (epizootic). Also in the so-called African *Rotz* a single injection of salvarsan cures the animal. Finally oriental sore which is caused by *Leishmania* is cured by salvarsan. It seems that in suitable forms of syphilis salvarsan used in sufficiently large and frequent doses is capable of effecting a complete sterilization of the body, and that in these cases results can be obtained that are not attainable by mercury. On the other hand, it seems that by a combination of salvarsan with mercury excellent results are obtained and that by means of this combination it is possible to secure results with smaller amounts of salvarsan than without it. By many authors emphasis has been laid on the point that from the sociologic standpoint our most important task is to treat syphilis in its early stages. It seems possible in over 90 per cent. of the affected cases to secure the healing of primary syphilis.

#### OUTLOOK

After a thorough exposition of the most suitable methods of early treatment Ehrlich concludes: If the result of securing a final cure in the great majority of cases of primary syphilis should be achieved, a very important forward step in the attempt to abolish this fearful plague would have been taken. Whether a permanent cure is possible in the later stages and to what extent must be determined by further experience.

## VIENNA LETTER

*(From Our Regular Correspondent)*

VIENNA, Oct. 10, 1911.

### Some Grievances Against the Proposed New Medical Act

The government has quite recently worked out a new medical act to replace the old one (from 1801), and has invited the medical councils to cooperate in its working; the councils have unanimously refused to undertake such a task in the short space of time allotted for its accomplishment. Moreover, several features of the act have called forth violent remonstrances from the majority of the practitioners. Thus, for instance, it is intended to bring into force the "numerus clausus" as regards practitioners in towns with more than 50,000 inhabitants, and in the *Curorte* (health resorts). Free competition would thus be made impossible. Another article deals with the medical boycott. The act would nullify and make punishable all negotiations or contracts between physicians by which parts of the population, districts or towns should not receive medical help. This aims at the most useful weapon of our profession here, which made possible the successful issue of several medical strikes where contract practice and club practice were at stake. Already the councils are conducting an action of protest against the act as such, and there is no possibility that it will become law before a year. By that time the profession will have drawn up a "medical act" of its own, wherein the interests of the profession and those of the public will be brought into harmony as far as possible.

### Moving of the Laryngologic and Pediatric Clinics

Within the last week the clinics for rhinolaryngology and for diseases of children have moved out of their old premises into their new grand houses. The new institutes provide for growth. Although at present they have each about 100 beds, the number can be increased by 50 per cent., if required. They are fitted most lavishly and absolutely up to date, according to the requirements of the professors (Chiari and von Pirquet). A more detailed description will be forthcoming in due time. A point worth mentioning is that in future the assistants of the clinics will not be allowed to follow up private practice in the hospital, as was hitherto the custom. The space occupied hitherto in the old house by these two clinics will be speedily converted, partly into laboratories and partly into use for new buildings.

## Marriages

HARRIET M. WILEY, M.D., and EDWARD W. WHITNEY, M.D., both of Northampton, Mass, at Tenants Harbor, Maine, October 12.

CLARENCE ADAIR RHODES, M.D., Atlanta, Ga., to Miss Agnes Stewart Plummer, at Washington Grove, Md., October 12.

RICHMOND FAVOUR, M.D., Boston, Mass., to Miss Dorothy Georgia M. Chapman of Bowdoinham, Maine, October 11.

MALCOLM CAMERON ROSE, M.D., New York City, to Miss Mary Ella Dunning of West Orange, N. J., October 10.

EMORY D. BERNARD, M.D., to Miss Nina deWolfe, both of Port Arthur, Texas, at Beaumont, Texas, October 11.

DAVID BARTON PENNIMAN, M.D., Argyle, Ill., to Miss Fannie Littell Rudgers of Montclair, N. J., October 4.

WALTER D. CHASE, M.D., Bethlehem, Pa., to Miss Helen M. Harleman of South Bethlehem, Pa., October 7.

WHEDON W. MERCER, M.D., Washington, Ill., to Miss Kathryn J. Giblin of Kankakee, Ill., September 20.

ROY HAMILTON PECK, M.D., Springfield, Mass., to Miss Alice Jemima Campbell, at Baltimore, October 11.

OSCAR MILTON MARCHMAN, M.D., Dallas Texas, to Miss Martha Jenkins of Waco, Texas, October 26.

WILLIAM PLUMER, M.D., Farmington, Ill., to Miss Pearl C. Winters of Pittsburgh, Pa., September 25.

JESSE R. KAUFFMAN, M.D., Blue Island, Ill., to Miss Alice Jane Rondthaler of Chicago, October 12.

FREDERICK G. SIGMAN, M.D., Spencer, N. C., to Miss Louise Wilson of Durham, N. C., October 8.

JOHN W. STEVENSON, M.D., Palouse, Wash., to Miss Blanche Campbell of Omaha, Neb., recently.

ELMER LE ROY BIGGS, M.D., Los Angeles, Cal., to Miss Grace Wentworth of Chicago, October 12.

GEORGE T. PENN, M.D., to Mrs. Gertrude M. Hughes, both of Spokane, Wash., October 4.

THOMAS J. TALBOTT, M.D., Baltimore, to Mrs. Mary J. Carland, at Baltimore, October 9.

J. FRANK SMALL, M.D., York, Pa., to Miss Anna M. Howell of Harrisburg, Pa., October 4.

LOUIS C. SWARTZLANDER, M.D., to Miss Mona Dillon, both of Omaha, Neb., October 25.

JUNIATTUS A. FISHER, M.D., to Miss Emily L. Smythe, both of St. Louis, October 12.

MARTIN KUTSCHER, M.D., to Miss Helene Kahn, both of New York City, October 5.

WALTER H. PILGER, M.D., to Miss Bertha Wilkins, both of Norfolk, Neb.

## Deaths

**Alexander Hugh Ferguson, M.D.**, a prominent surgeon of Chicago, died at his home in that city, October 20, from diabetes, aged 58. He was born in Ontario, and was an honor graduate of the Medical College of the Trinity University in 1881. He began practice in Manitoba in 1882, where he remained until 1894, when he moved to Chicago. He was one of the founders of Manitoba Medical College, Winnipeg, for three years was professor of physiology and histology in the institution, and for eight years thereafter professor of surgery. In 1894 he was made professor of surgery in the Chicago Post-Graduate Medical School and Hospital, and since 1900 had been professor of clinical surgery in the College of Physicians and Surgeons.

His society membership included the American Medical Association, British Medical Association (in which he served as first president of the Manitoba Branch); Chicago Medical Society (of which he was president in 1910), Western Surgical and Gynecological Society (of which he was once president), the American Surgical Association and other learned societies. In 1906 Dr. Ferguson was honored by the king of Portugal with the decoration of Commander of the Order of Christ of Portugal. His hospital appointments included those of surgeon to the Winnipeg Hospital, surgeon-in-chief to St. Boniface Hospital and chief operator at Brandon and Morden hospitals, Manitoba, and after his removal to Chicago he became surgeon to the Post-Graduate Hospital and Cook County Hospital for the Insane, and was also surgeon-in-chief to the Chicago Hospital.

Dr. Ferguson had been afflicted for many years with diabetes; recently a carbuncle on the neck developed; other carbuncles formed and a condition of general sepsis followed which, with the previously existing diabetes, produced a condition too formidable for even his great strength to resist, and he succumbed at a comparatively early age and in the full tide of his professional usefulness.

**Helene Knabe, M.D.**, formerly state bacteriologist of Indiana, was found dead in her apartments in Indianapolis, October 24, with her throat cut. She came from Germany to this country as a young girl, and paid the expenses of her medical education by her own efforts; she graduated with honors in 1904 from the Medical College of Indiana. Immediately after her graduation, she was made supervisor of the laboratories and assistant in pathology in her alma mater, and later was appointed demonstrator of pathology in the medical department of Purdue University. In October, 1905, she was appointed assistant pathologist and bacteriologist in the Indiana State Laboratory of Hygiene and later was made state bacteriologist. She resigned from this position a short time ago to devote her time to the study of hygiene and physical culture. She was a member of the American Medical Association and the Mississippi Valley Medical Association. Dr. Knabe's untimely death at the age of 35 deprives the medical profession of an enthusiastic worker in the field of hygiene and sanitation; one whose excellent qualities endeared her to her many friends.

**George W. Hogeboom, M.D.** Berkshire Medical College, Pittsfield, Mass., 1864; one of the oldest practitioners of Kansas; surgeon of the Eleventh Kansas Volunteer Infantry with the rank of major during the Civil War; for several terms a member of the house of representatives and senate from Jefferson County; chief surgeon of the Santa Fe System for fifteen years and organizer of the hospital system of that road; died at his home in Topeka, October 8, from pleurisy, aged 79.

**William I. Bertram, M.D.** University of Berlin, Germany, 1849; said to have been the oldest practitioner of Keokuk, Iowa; assistant city physician of New Orleans in 1853 during the yellow fever epidemic; from 1862 to 1864 surgeon of volunteers with the rank of major; consul to Montevideo, Uruguay in 1872 and also consulting surgeon to the Marine Hospital at that place; died at his home in Keokuk, October 3, from senile debility, aged 85.

**Alsephus T. Robertson, M.D.** Jefferson Medical College, 1861; formerly a school teacher in the Choctaw Nation, but since 1864 a resident of Ashmore, Ill.; for ten years town clerk and also police magistrate, supervisor and a member of the local board of U. S. pension examiners; died at the home of his son in Denver, September, from chronic gastritis, aged 77.

**Philip F. Casey, M.D.** University of Buffalo, N. Y., 1882; a member of the American Medical Association; for several years physician at the California State Penitentiary, San Quentin, thereafter a practitioner in San Francisco, and since the earthquake and fire, a resident of Oakland; died at his home October 1, from heart disease, aged 57.

**Elisha Eugene Gilmore, M.D.** Transylvania University, Lexington, Ky., 1867; Kansas City (Mo.) Medical College, 1878; formerly a member of the American Medical Association and president of the Hodgens Medical Association; died at the home of his sons in Kansas City, May 19, from pneumonia complicating mitral insufficiency, aged 75.

**Annie Rose Baker-Hainer, M.D.** Woman's Medical College of Pennsylvania, Philadelphia, 1903; a member of the South Dakota Medical Association and Secretary of the Public Health Education Committee of the American Medical Association for South Dakota; died at her home in Sioux Falls, June 23, from pneumonia, aged 40.

**Charles Henry Hartline, M.D.** Jefferson Medical College, 1892; of Oley, Pa.; local registrar of the State Board of Health; was found dead in the woods near his home October 5, as the result of shock and hemorrhage from incised wounds of the neck and wrists believed to have been self-inflicted with suicidal intent, aged 52.

**William H. H. Hagey, M.D.** Rush Medical College, 1868; a member of the Nebraska State Medical Association and president of the Elkhorn Valley Medical Society of Norfolk, Neb.; secretary of the local U. S. pension examining board; died suddenly in Norfolk, October 8, from cerebral hemorrhage, aged 69.

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**Lester W. Shean,** M.D. St. Louis College of Physicians and Surgeons, 1887; for thirty-two years a practitioner of Canaan, Maine; president of the Canaan Board of Trade, selectman and a member of the school board; died at his home October 3, from heart disease, aged 65.

**Frank Byron Flanders,** M.D. Harvard Medical School, 1878; a member of the Massachusetts Medical Society and for several years secretary of the Lawrence Medical Club; visiting surgeon to the Lawrence General Hospital; died at his home, September 29, aged 61.

**James Watson Scott,** M.D. Medical College of Indiana, Indianapolis, 1879; for twelve years an assistant surgeon at the National Military Home at Danville and its branch at Marion; died at the Danville institution, October 2, from acute gastritis, aged 54.

**George P. Bailey,** M.D. Dartmouth Medical School, Hanover, N. H., 1882; for three years a member of the common council of Natick, Mass., and during the last year president of the council; died at his home in Natick, October 1, from nephritis, aged 53.

**James Welch Guthrie,** M.D. University of Michigan, Ann Arbor, 1862; of Bedford; assistant surgeon of the Twentieth Ohio Volunteer Infantry during the Civil War; died at the home of his son in Orange City, Ia., September 27, aged 84.

**Frelinghuysen H. Gulledge,** M.D. New Orleans (La.) School of Medicine, 1869; local surgeon of the Illinois Central Railroad at Goodman, Miss.; died at his home in that place, June 12, from chronic interstitial nephritis, aged 65.

**Joseph Oliver Andrews** (license, years of practice, Indiana), for nearly fifty years a practitioner of Westland, Hancock County, died at the home of his daughter in Greenfield, Ind., July 8, from cerebral hemorrhage, aged 79.

**Garland J. Watkins,** M.D. University of Arkansas, Little Rock, 1897; a member of the Arkansas Medical Society, and formerly president of the Boone County Medical Society; died at his home in Bellefonte, May 1, aged 35.

**George Duffield Armstrong,** M.D. Jefferson Medical College, 1839; one of the oldest practitioners of Chester County, Pa.; died at his home in New London, May 19, from bronchitis following whooping cough, aged 96.

**Joseph M. Hollingsworth,** M.D. College of Physicians and Surgeons, Baltimore, 1886; a member of the Medical Society of the State of North Carolina; died suddenly at his home in Mount Airy, April 12, aged 55.

**George Washington Smith,** M.D. College of Physicians and Surgeons, Chicago, 1902; died at his home in that city, October 2, from phlebitis and cardiac dilatation following pleurisy, aged 46.

**Llewellyn D. Eaton,** M.D. Cleveland University of Medicine and Surgery, 1871; formerly of Palatka, Fla., but for several years a practitioner of Sanford; died at his home in that city, September 18.

**Newton M. Massey** (license, Michigan, 1900); for more than forty years a practitioner of Newaygo; died at the home of his son in Barryton, October 4, from cerebral hemorrhage, aged 66.

**William Payne Russell,** M.D. Atlanta (Ga.) Medical College, 1891; of Hayneville, Ala.; died in Montgomery, Ala., April 4, from the effect of gunshot wounds of the chest and abdomen, aged 47.

**Julius L. Speas,** M.D. Jefferson Medical College, 1877; a Confederate veteran of Boonville, N. C.; died in church in that place, September 24, from heart disease.

**George Schoonover** (license, Kansas, 1901); said to have been the oldest practitioner of Anderson County; died at his home in Garnett, October 4, aged 78.

**Joseph M. Perry,** M.D. Medical College of the State of South Carolina, Charleston, 1860; formerly of Lakeland, Fla.; died at his home in Pensacola, September 19.

**Joseph Penn Cheney,** M.D. University of Maryland, Baltimore, 1852; died at his home in Brentwoodsville, Md., October 3, from senile debility, aged 80.

**John Daniel Lavery** (license, eighteen years of practice, Michigan, 1900); died at his home in Mount Pleasant, Mich., June 7, from paralysis, aged 69.

**James W. Fletcher,** M.D. Cincinnati College of Medicine and Surgery, 1861; died at his home near Rufus, Ky., Oct. 9, 1910, from senile debility, aged 72.

**Felix H. Johnson,** M.D. Jefferson Medical College, 1869; died at his home in Gainesville, Texas, October 4, from disease of the stomach, aged 65.

**Charles M. Hoag,** M.D. Eclectic Medical Institute, Cincinnati, 1907; died in his home in Judsonia, Ark., August 19, from typhoid fever, aged 29.

**Charles Edward Stammler,** M.D. College of Physicians and Surgeons, New York City, 1885; died at his home in Brooklyn, September 28, aged 56.

**John A. Francis,** M.D. Medical College of Ohio, Cincinnati, 1868; died recently at his home in Covington, Ky., and was buried October 3, aged 66.

**James Fair,** M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1883; died at his home in New Paynesville, Minn., in August.

**Herbert L. Atkins,** M.D. Medical College of Virginia, Richmond, 1893; died at his home in Boydton, Va., July 20.

**William M. Murdock** (license, North Carolina, 1876); died at his home in Balsam, April 13, from heart disease.

# The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

## CONVICTIONS UNDER THE FOOD AND DRUGS ACT *

(*Continued from page 1385*)

### NICHOLS' COMPOUND KOLA CORDIAL

This drug was made by Billings, Clapp & Co., Boston, who claimed that it contained:

| | |
|---|---|
| Kola Nut | 40 grains. |
| Coca Leaves | 40 grains. |
| Strychnin | 1/50 grain. |
| Alcohol | 20 per cent. |
| Cocain, in each ounce | 0.2 |

The product was declared misbranded because, while it was labeled "Nichols' Compound Kola Cordial," it was not manufactured by Nichols and it was not kola; further it did not contain 20 per cent. alcohol and neither did it contain the proportion and amounts of cocain, kola nut, coca leaves or strychnin, which the label represented it to contain. The company first pleaded not guilty but later changed its mind, and was fined $25.—[*Notice of Judgment, No. 909.*]

### HARRIS' LITHIA WATER

"Nature's Remedy—Harris' Lithia Water, for the liver, kidneys, stomach and the bladder, and all affections attendant on a uric acid condition" was offered for sale in the District of Columbia. The label stated that:

"This water is unequalled for the cure of rheumatism, gout, constipation, all forms of dyspepsia, stone in the bladder, catarrh of the stomach, Bright's disease," etc

The label also bore what purported to be a certified analysis in which the statement appeared that the water contained 2.86 grains of lithium bicarbonate to the gallon. The analysts in the Bureau of Chemistry found, however, that Harris' Lithia Water contained only about 1/830 grain of lithium to each gallon. The product was declared misbranded because it was not a lithia water and did not contain the amount of lithium bicarbonate given on the label. The consignee, Thomas H. Atkinson, of Washington, D. C., admitted the charges brought by the government. The court decided that the bottles of water might be returned to Atkinson after he had paid the cost of the proceedings and had given bond that the water should not be sold or disposed of contrary to law. [*Notice of Judgment, No. 924.*]

### DR. ELDERS' CELEBRATED TOBACCO SPECIFIC

H. W. Elders of St. Joseph, Mo., shipped into the state of Michigan a quantity of a drug preparation having the name given above and under claims that were in part as follows:

* Descriptions of ninety convictions previously reported in popular form in THE JOURNAL are issued as an illustrated pamphlet, entitled "Convictions," price 6 cents.

BEST COPY AVAILABLE
FOR REPRODUCTION

"Cures Smoking, Chewing, Cigarette and Snuff Dipping Habits in three to five days."
"It is as Certain in its Cure as are Taxes and Death sure to all."
"Oldest, Cheapest, Best. Thousands so testify."
"A positive cure for the 'Tobacco Heart'."
"Contains no injurious drugs or ingredients."

Analysis by the government chemists showed that the tablets consisted essentially of cocain and cocain derivatives, strychnin and cinchona alkaloids. The cocain, strychnin and cinchona alkaloids amounted to about 3/10 of 1 per cent. The remainder of the tablets consisted of sugar and starch with a small amount of ginger, the whole being filavored with artificial oil of wintergreen. As the tablets were not a specific for the tobacco habit and as it did contain "injurious drugs or ingredients," the product was declared misbranded. Elders pleaded guilty and was fined $100 and costs. [*Notice of Judgment, No. 930.*]

### CHANDLER'S HEADACHE BUTTONS

Another typical headache mixture, each "button" containing 3½ grains of acetanilid as well as caffein. The label stated that it would cure rheumatism, nervous headache, neuralgia and other things "in fifteen minutes." This, of course, was an untruth and the stuff was declared misbranded. The Chandler Medicine Company of St. Louis, who distributed this stuff, pleaded guilty and was fined $10 and costs. [*Notice of Judgment, No. 931.*]

### SABINE'S BLACKBERRY SOOTHING DROPS

A preparation of this name was shipped by the A. J. Lemke Medicine Company of Milwaukee into another state. It was labeled as a "cure" for diarrhea, dysentery, colic and cramps, and pain in the stomach and was recommended for "summer complaint" and teething children. Analyzed by the government chemists, it was found to contain nearly 10 per cent. of alcohol with glycerin, sugar and oil of cassia. The nostrum was declared misbranded because of the falsity of the therapeutic claims and because the proportion of alcohol was not given. The defendant pleaded guilty and was fined $10. [*Notice of Judgment, No. 933.*]

### VANI-KOLA COMPOUND SYRUP

This was a soft drink preparation made by the Vani-Kola Company of Canton, Ohio. Analysis disclosed the presence of cocain and caffein and the product was therefore deemed adulterated in that it contained deleterious ingredients. It was also declared misbranded because the quantity or proportion of cocain was not given on the label. The company was fined $25 and costs after entering a plea of nolo contendere. [*Notice of Judgment, No. 935.*]

### WHITE'S HEADEASE

O. P. White of Rusk, Texas, made and sold a liquid "headache cure" which contained acetanilid, alcohol and caffein. According to the label, it "contains no . . . enslaving drugs." The jury before whom the case was tried agreed with the Department of Agriculture that acetanilid and caffein are enslaving drugs and the product was therefore misbranded. White was fined $25. [*Notice of Judgment, No. 941.*]

### AMMON PHENYL

Salvadore Penny, doubtless feeling that his own name was not sufficiently imposing, did business under the style International Chemical Company, Palisades Park, New Jersey. Mr. Penny was engaged in a business that used to be very popular among a certain class of self-styled pharmaceutical manufacturers, namely, that of selling a simple acetanilid mixture under a pseudo-scientific and sonorous title. "Ammon Phenyl" was said to be:

"Antipyretic Antiseptic, Antineuralgic, Antiseptic Puritas et Potentia. Non Plus Ultra Stimulant, Laxative . . . For Physicians' Prescriptions only . . . Ammoniated Pheno Acetyl, $C_6H_5NH_2$."

"Ammon Phenyl is one of the acetyl derivatives of anilin of the Amido-Benzene Series whose base is $C_6H_5NH_2$, combined by our own special chemical process with ammonia. The presence of ammonia tends to overcome the depressing effects usually observed in other Coal Tar derivatives . . . "

And a great deal more pseudo-scientific nonsense of the same type. A sample of this wonderful chemical was analyzed by the government chemists and found to be a mere mixture of:

Acetanilid
Sodium bicarbonate
Ammonium bicarbonate

This headache remedy was declared misbranded because of the attempt on the part of the manufacturer to obscure the origin or nature of the product and make it appear that this simple mixture was a chemical compound. The inference given that the mixture did not produce the depressing effects of acetanilid was also false and misleading. In addition to this the therapeutic claims were declared false. Penny entered plea of non vult and was fined $25. [*Notice of Judgment, No. 942.*]

### SMITH'S QUININETS

Smith's Quininets were sold by C. E. Rupert Smith of Philadelphia. It was labeled as "a sure cure and preventive" for a long list of ailments, although analysis showed it to consist essentially of a mixture of quinin and acetanilid. The product was declared misbranded because of the false therapeutic claims. Smith pleaded guilty and was fined $5. [*Notice of Judgment, No. 965.*]

### BUCKHEAD LITHIA WATER

This water shipped by the Buckhead Springs Company of Buckhead, Virginia, was another lithia water that did not contain any measurable quantity of lithia. It was declared misbranded and as no one appeared to claim it, the courts ordered its destruction. [*Notice of Judgment, No. 968.*]

### WALKER'S TONIC

Walker's Tonic Company and Sam Dreyfuss, both of Paducah, Ky., shipped a consignment of this preparation to Tennessee. It was sold as a "brain food," "heart tonic," "stomachic" and "liver regulator," and was a nostrum of the cure-all type. When analyzed, it was found to consist essentially of 18.21 per cent. alcohol, 4.02 per cent. non-volatile material, including capsicum, celery, an emodin-bearing drug and other drug extractives, the balance of the product being water. It was declared misbranded because of the falsity of the therapeutic claims. The defendant pleaded guilty and was fined $25 and costs.—[*Notice of Judgment, No. 982.*]

### HAARLEM OIL CAPSULES

This product sold by the Holland Medicine Company, Scranton, Pa., was labeled "Genuine Haarlem Oil Capsules." Analysis by federal chemists showed that the preparation contained methyl salicylate which is not a normal ingredient of Haarlem oil. Various false and extravagant claims were made for the nostrum. It was declared misbranded because of the therapeutic claims and because of the presence of methyl salicylate. A plea of nolo contendere was entered by the defendant and the court imposed a fine of $10 and costs.—[*Notice of Judgment, No. 987.*]

### HUMBUG OIL

Humbug Oil was the expressive and truthful title given to a nostrum shipped by Mrs. J. F. Marshall Smith of Minnesota to Utah. If no other claim than that denoted by its name had been made, Mrs. Smith could doubtless have continued to sell her nostrum unmolested. It was said, however, to "relieve diphtheria of the most malignant type." The government chemists reported that Humbug Oil consisted essentially of 20 per cent. oil of turpentine, 20 per cent. linseed oil and the balance a watery-alcoholic solution of ammonia water, ammonium salts and a volatile alkaloid, probably coniin. While the stuff was undoubtedly a humbug, it would not "relieve diphtheria of the most malignant type" and was therefore declared misbranded. The defendant was fined $5 after entering a plea of guilty.—[*Notice of Judgment, No. 988.*]

### DR. MOFFETT'S TEETHINA

T. N. Flourney, who does business in St. Louis under the name of C. L. Moffett Medicine Company, shipped a consign-

ment of Dr. Moffett's Teethina into another state. Analysis of this preparation showed the product to be a powder consisting essentially of:

| | |
|---|---|
| Opium. | Calomel. |
| Calcium carbonate. | Powdered cinnamon. |

This mixture was said to aid digestion, heal eruptions and sores, prevent a tendency to colic, remove and prevent worms in children, strengthen the child and make teething easy—and to do several other things. All of these claims were declared false by the government officials and on that ground the preparation was declared misbranded. Flourney pleaded guilty and was fined $10 and costs.—[*Notice of Judgment, No. 1019.*]

FITCH RHEUMATIC CURE

The Fitch Remedy Company of Racine, Wis., made this stuff, which was "guaranteed to cure the most stubborn case of sciatic or muscular rheumatism." The government chemists reported that it was found to consist essentially of rhubarb and alcohol. False therapeutic claims were the basis of the charge of misbranding brought by the government. The defendant pleaded guilty and paid the $10 fine that was imposed.—[*Notice of Judgment, No. 1024.*]

CERRODANIE CAPSULES

Samuel H. Jameson, who did business at Decatur, Ill., under the firm name of The Cerrodanie Company, made the following claims on the label of his nostrum:

"A positive cure for rheumatism."
"We are the first to discover the true cause of rheumatism."
"A radical and certain cure of this dreaded disease."

The capsules were reported by the government chemists to contain sodium salicylate, potassium nitrate and charcoal, together with a small amount of chloroform extract, containing capsicum and an unidentified oily substance and a large amount of talc and the carbonates and oxids of sodium and potassium. Because the therapeutic claims made for this preparation were false, it was declared misbranded. Jameson pleaded guilty and was fined $10 and costs.—[*Notice of Judgment, No. 1025.*]

(*To be continued*)

## Correspondence

### Eliminate the Term "Allopath"

*To the Editor:*—The following correspondence speaks for itself:

MR. JOSEPH W. HILL, President,
Atlanta City Directory Company,
Atlanta, Ga.

*Dear Sir:*—In recent issues of the "Atlanta City Directory," the medical practitioners of the city have been classified as "Allopathic," "Homeopathic," "Eclectic," etc., and at a regular meeting of the Fulton County Medical Society, the undersigned were appointed a committee to confer with you, as president of the directory company, in regard to this classification.

Medical men may be divided into two grand classes—physicians and practitioners of exclusive systems. The adherents of the several systems which have come into existence from time to time, and some of which are now represented in this country, have adopted certain distinctive terms to designate their peculiar practice and to distinguish them from the great body of educated and scientific physicians who belong to no sect, affiliate with no "school," accept no dogma, acknowledge no creed and recognize no arbitrary limit in their practice of the healing art.

To the employment of nicknames on the part of these seceders we urge no objection, and in the use of such names by them—whatever may be their object—we have no concern. Their segregation is voluntary, and the names selected by themselves, it is presumed, are appropriate and agreeable to them.

This is not true, however, of the attempt to fix the name "allopathic" on the reputable physicians of the country. Any such epithet is objectionable and offensive to them, and is repugnant to truth. They are physicians—regular physicians, if you prefer—and it is impossible to apply a qualifying term that appropriately describes their status. They hold that it is inconsistent with the dignity of a learned and honored profession to be designated by a nickname or by any appellation of restrictive significance, and that it is entirely at variance with propriety and the facts to describe their faith or practice by a word, when they are not, in any manner, bound or limited in their views of disease, the selection of remedies or the application of remedial agents.

No descriptive term, therefore, is necessary, and none is available. They cannot properly be circumscribed, hedged in or defined. Physicians are the disciples of the whole science and art of medicine in its widest and most comprehensive sense—nothing more and nothing less—without any real or professed limitations, whatsoever.

We feel confident that, on reflection and investigation, you will coincide with these views and that you will accede to our request to eliminate, as misleading, unnecessary and unjust, this distasteful feature of your excellent work.

Awaiting your answer, we are

Yours very truly,
JAMES B. BAIRD, M.D.,
JOHN C. OLMSTED, M.D.,
L. P. STEPHENS, M.D.,
Committee.

DR. J. B. BAIRD, Chairman Committee,
Fulton County Medical Society, City.

*Dear Sir:*—Replying to your recent favor requesting that we discontinue the use of the term "allopath," as applied to the medical fraternity belonging to your school of medicine, beg to say that it will afford us great pleasure to comply with your request.

In publishing the city directory, it is our chief aim to give satisfaction to everybody and to be accurate in our statements.

With kindest regards, we are

Yours very truly,
ATLANTA CITY DIRECTORY COMPANY.
Per JOSEPH W. HILL.

I am informed that the objectionable term "allopathic" is in general use throughout the country among directory publishers, and I believe the medical profession should make determined resistance to the obnoxious practice. It is doubtless largely the result of ignorance on the part of publishers—an ignorance which also involves the general public and even some reputable medical men.

It will be a gracious and profitable move on the part of THE JOURNAL with its wide influence to take cognizance of this question.

JAMES B. BAIRD, Atlanta, Ga.

### Antifat and Society Women

*To the Editor:*—An editorial in THE JOURNAL, entitled "Antifat and Society Women" (Oct. 14, 1911, p. 1290), induces me to report the following, showing a dangerous effect of thyroid: About five years ago a woman, aged 42, came to me complaining that in bright light she had difficulty in seeing, all objects appearing more or less hazy; but in a subdued light, or even in comparative darkness she had no trouble. An ophthalmoscopic examination showed an apparently normal fundus, with the possible exception of slight blurring of the edges of the disk. The vision was 2/3 of normal in each eye. Perimetric examination disclosed an oval central scotoma for red and green in both eyes. Investigation of her mode of life revealed no apparent cause for this condition; she denied being addicted to either tobacco or alcohol. Repeated examination disclosed no sugar in the urine, this being the most frequent cause of a chronic toxic amblyopia, such as she was suffering from. Quite accidentally, during a subsequent examination, she volunteered the information that for a number of months she had been taking an antifat remedy recommended by a friend. Investigation revealed the fact that this patient had been taking thyroid extract for almost three months to reduce her weight. The thyroid was at once stopped; the patient was given strychnin hypodermatically, and in a few weeks the scotoma disappeared. On searching the literature at that time, I found one similar case reported by Albertsberg (*Arch. f. Augenh.* [Knapp's], January, 1904, p. 86), who cites four cases reported by Coppez. Whether any cases have been reported since that time, I am unable to say.

EMANUEL F. SNYDACKER, Chicago.

### Low Sanitary Standards in Rural Communities

*To the Editor:*—A Current Comment in THE JOURNAL (Oct. 7, 1911, p. 1214) leads me to describe the *status quo* of the town in which I am practicing. No doubt there are numerous parallel cases which literally "smell to heaven," while eliciting no reaction in the obtuse sensibilities of human beings. Our community has about 2,000 inhabitants, but is not incorporated, being part of the township government. It has been built up alongside a foundry which employs nearly all the men of the place; the owners of the foundry

hold title to a large section of the dwellings. There is no sewer system and no public water-supply, a matter of surprise in view of the fact that the inhabitants are mostly American-born. In three squares of the section owned by the foundry authorities, the water-closets are without vaults and all overflow into open drains in the rear alleys, from which the contents are carted away at irregular intervals. In three other squares of this section the water-closets abut on and overflow into the streets. The supply of drinking-water of the residents of this section comes from wells in close proximity to these outhouses. A one-room school housing seventy pupils, with a triangular playground about 40 feet in its greatest dimension, is situated directly between and separates these two sections. The health standards in this place are markedly low, but the place is lacking in representative citizens informed and disinterested enough to demand redress. There is a local board of health, but it fails to act in the matter. An appeal to the state board of health elicits the information that it has no power to act in cases in which the nuisance is not a proved source of contagion. I believe that, for the proper application of the remedies suggested in the Current Comment, a radical broadening of the power of state health boards is demanded, since the members of local boards are usually incompetent to deal efficiently with questions of sanitation. PHILIP J. DORETY, M.D., Florence, N. J.

### Thrombosis of the Mesentery Diagnosed Before Death

*To the Editor:*—I take exception to the statement of Dr. R. W. Wakefield in his article, "Thrombosis of the Mesentery," etc. (THE JOURNAL, Oct. 14, 1911, p. 1286), that "thrombosis of the mesentery . . . is never diagnosed except at operation or post mortem." I recall a case in which I made a necropsy several years ago at the University Hospital, in which an ante-mortem diagnosis was correctly made by Dr. Alfred Stengel. The most striking of the symptoms was sudden severe abdominal pain. Autopsy revealed a thrombus in the superior mesenteric artery close to its origin, with corresponding segmental gangrene of the ileum.

PENN G. SKILLERN, JR., Philadelphia.

### Postoperative Constipation

I cannot agree with Dr. S. T. Pope (THE JOURNAL, October 21, p. 1359) that postoperative constipation is not harmful, or that it never causes auto-intoxication. In September a case in the Akron City Hospital after operation (performed for me by a surgeon) resulted in stasis of the intestine. The following failed to produce a movement: castor oil, enemata, aloin-belladonna-strychnin-cascara pills, cascara alone, phenolphthalein, etc., all repeated several times. Meanwhile the temperature climbed up day by day to over 103 F. Finally, twelve ounces of fluid citrate of magnesia did the work, and the temperature dropped to normal.

A. S. MCCORMICK, Akron, O.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### DEFINITION OF THE WORD MORON

*To the Editor:*—In some recent medicolegal data I have seen used several times the word "moron." In consulting medical dictionaries and medicolegal works, I have not found a satisfactory definition. It seems to be derived from the Greek word μωρία, meaning madness, dementia or folly. Please give the accepted definition of the word. E. MOORE FISHER, M.D., Wilmington, Del.

ANSWER.—Moron is a term applied in the classification of feeble-minded or subnormal children and indicates a high-grade feeble-minded child as distinguished from the imbecile or the idiot. The word, as our correspondent surmises, is from the same root as the Greek μωρία, folly, deing derived from the adjective μωρός, foolish. The English word "fool," as formerly used, describes exactly the individual designated by the term moron. Defectives have been divided into three classes: (1) those who never advance beyond the mental age of 3—these are the idiots; (2) those so retarded that they never advance beyond the mental age of 7—these are the imbeciles; (3) those so retarded that they never advance beyond the mental age of 12—these were formerly classed as high-grade feeble-minded children, but are now designated as "morons." Such children, if sufficiently high-grade to be sent to school, will always be behind and will reach their final mental development at the 12-year-old level. The moron can be trained to do a great many things but can never be made normal nor competent to take care of himself without direction. It is said that statistics show that from 1 to 2 per cent. of all school children belong to this type of feeble-minded. In a study of nearly 10,000 feeble-minded children, H. H. Goddard ("Subnormal Children," *Training School*, September, 1910) finds that the morons not only are subnormal mentally but show decided deviation from the normal in their growth. They cease growing from two to three years earlier than normal children, although this is not so apparent during the school age. As tested by the dynamometer, they have a capacity of from 20 to 30 per cent. of normal children. From among them come the dullards, and often the truants and incorrigibles.

### PROCHOWNICK DIET IN PREGNANCY

*To the Editor:*—Please give details of the Prochownick diet and indications for its use. F. W. L.

ANSWER.—For patients threatened with dystocia on account of a contracted pelvis, excessive development of the fetus with normal pelvis or fat and weak abdominal walls, Prochownick proposed a diet for the last eight weeks of pregnancy which should decrease the size and weight of the child, while strengthening the mother. The essential features of the diet are the withholding of carbohydrates and fluids and the giving of sufficient amounts of proteids. It is practically an antifat diet.

The following is the daily bill of fare:

Morning, one small cup of coffee without sugar; a small, thin piece of bread (¾ of an ounce).

Noon, all kinds of meat, fish without sauces, eggs, a little green vegetables, salad and cheese.

Evening, same as at noon, one medium piece of bread (1½ ounces) butter, eggs and meat.

If the patient is accustomed to the use of alcohol, a small bottle of red or white wine is allowed, or an equal quantity of water may be taken during the day.

Large quantities of liquids, soups, potatoes, desserts, sugar, etc., are forbidden.

Such a diet provides about 125 gm. of proteids giving 500 calories; 100 gm. of carbohydrates having 400 calories and 100 gm. of fat having 900 calories or in all about 1,800 calories a day.

Fat patients with weak muscles improve physically and mentally on this diet and come to labor in a much improved condition. As to the effect on the child, Prochownick and his followers assert that it will weigh a pound less than it would in the absence of the diet. The fat of the new-born, which amounts to 1 or 2 pounds, is laid on during the last eight weeks of pregnancy; the diet prevents this fat deposit. The child looks wrinkled, the head sutures are larger, and the head molds much better in its passage through the obstetric canal.

While the favorable effect of the diet is acknowledged by all, the results reported by Prochownick and a number of other good observers are such as to justify its adoption in proper cases. It is indicated, as already intimated, in women who are not very thin and anemic and who have a moderately contracted pelvis, conjugata vera between 8.5 and 10 cm., and especially in such multiparæ who have had a difficult labor. It is also indicated in a woman with a normal pelvis who has previously had a very large child and hard labor. Likewise it is indicated in a woman who has fat, weak muscles in whom dystocia may be expected due to insufficiency of the forces of labor.

# The Public Service

## Medical Officers, U. S. Army

Changes during the week ended Oct. 21, 1911.

Feely, James F., acting dental surgeon, left his home, Philadelphia, October 13, for his station, Ft. Slocum, N. Y.

McIntyre, H. B., captain, left Ft. Caswell on leave of absence for three months.

Puffner, E. L., major, returned to Ft. Missoula from leave of absence.

Sheckley, M. A. W., major, on arrival of the *Sherman* will accompany the 146 C. A. to Ft. H. G. Wright, N. Y., then proceed to his station, Ft. Niagara.

Griffin, A. M., M.R.C., on arrival of the *Sherman* will accompany the 2nd Battery 20th Inf. to Ft. Douglas, Utah, then proceed to his station, Ft. Riley, Kan.

Mason, G. L., dental surgeon, reports his arrival at Ft. Omaha, Neb.

Heterick, R. H., lieut., reports his return to Ft. Brady, Mich., from leave of absence.

Bushnell, G. E., colonel, reports his departure from the Army General Hospital, Ft. Bayard, N. M., on thirty days' leave.

Sherwood, C. E., acting dental surgeon, reports his departure from Greenfield, Mass., for Columbus Barracks, O. (to obey his first orders).

Feely, James F., acting dental surgeon, reports arrival at Ft. Slocum, N. Y., for duty.

Gaccon, L. C., lieut., granted leave of absence for three months on surgeon's certificate of disability.

Boehs, C. J., M.R.C., returned from duty at Plattsburg Barracks, N. Y., and order to Ft. Banks, Mass., for duty.

Sanford, J. L., M.R.C., relieved from duty at Ft. Ruger, H. T., and will sail on the transport leaving Manila Oct. 15, 1911, for San Francisco, and on arrival will proceed to his home and stand relieved from active duty in the M.R.C.

Griffin, A. M., M.R.C., granted leave of absence for one month and twenty days, with permission to apply for an extension of one month, to take effect on relief from duty with troops at Ft. Douglas, Utah.

Crosby, W. D., lt.-col., left Soldiers' Home, Washington, D. C., for Army and Navy General Hospital, Hot Springs, Arkansas, for treatment.

Greenleaf, H. S., major, granted leave of absence for three months.

Sherwood, C. E., acting dental surgeon, reports his arrival at Columbus Barracks, Ohio, for duty.

Wing, F. F., dental surgeon, left Ft. D. A. Russell, Wyo., for Ft. Lincoln, N. D., for temporary duty.

Holmberg, C. E., lieut., returned to Ft. Bayard, N. M., from leave of absence.

Brooke, Roger, major, arrived in the U. S. and reported for duty at the U. S. Army General Hospital, Presidio of San Francisco.

Weed, M. D., lieut., returned from duty on the *Sherman* and assigned to duty on the *Thomas* as surgeon.

Huber, E. G., lieut., granted leave for one month about Oct. 15, and authorized to await at Nagasaki the arrival of the transport to leave Malia Nov. 15, 1911.

Parce, A. D., lieut., granted leave of absence for one month and fifteen days about Oct. 4, 1911, and authorized to await at Nagasaki the arrival of the transport to leave Manila Nov. 15, 1911.

## Medical Corps, U. S. Navy

Changes during the week ended Oct. 21, 1911.

Miller, O. J., acting asst.-surg., appointment revoked from Oct. 21, 1911.

Tolfree, H. M., surgeon, detached from the navy recruiting station, Atlanta, Ga., and ordered to duty at the naval hospital, Norfolk, Va.

Jenness, B. F., P. A. surgeon, detached from the naval hospital, Norfolk, Va., and ordered to the navy recruiting station, Atlanta, Ga.

Stuart, M. A., P. A. surgeon, detached from the *Franklin* and ordered to duty at the naval hospital, Norfolk, Va.

Mann, Jr., W. L., asst.-surg., detached from the *Tennessee* and ordered to the *Hannibal*.

Stone, E. P., medical inspector, detached from duty at the naval hospital, Canacao, P. I., and ordered to naval hospital, Mare Island, Cal., for treatment.

# Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POSTGRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

## NEWSPAPER ENDORSEMENTS OF NATIONAL HEALTH LEGISLATION

The newspapers are giving an increasing amount of space to the endorsement of public health legislation. The duty of the state to protect the public health is now being urged by many of our leading dailies and sentiment is rapidly growing in all parts of the country in favor of advanced state activity on this subject. It is only possible to reprint an occasional newspaper editorial, from time to time, for the information of the readers of THE JOURNAL. A recent issue of the Spokane *Review* contained an excellent editorial entitled:

### CARE OF HEALTH FALLS WELL WITHIN THE SPHERE OF THE STATE

"The American Medical Association pursues a statesmanlike policy in pushing doctors into the lecturing field as apostles of the gospel of health and of national conservation of human health.

"The *Spokesman-Review* has always accepted the view expressed by Gladstone that the care of health, both that of the individual and that of the community, falls well within the sphere of the state and the legitimate functions of the government.

"A great authority on the value of man said that he is of infinite worth. Economists have estimated the annual cost of avoidable diseases to a country as amounting to millions on millions of money. But governments expend immense amounts on preventing disease among the animals used by men and practically nothing to avoid the needless diseases of human beings.

"This is putting the cart before the horse. It betrays an inverted sense of relative values. If the national government has in ten years spent $40,000,000 to protect the health of crops and animals it may logically and consistently be expected to spend more for the health of the toiling men and loving women and dear children, that are worth infinitely more than grains, fruits, donkeys and cows."

"PUPPY LOVE" vs LOVE FOR HUMANITY

FALSE SENTIMENT CANNOT PREVAIL AGAINST THE FLEA OF HUMAN LIFE.

## POSTGRADUATE COURSE FOR COUNTY SOCIETIES

[NOTE.—The pamphlets containing the outline of the postgraduate study course for county societies for the coming year are ready for distribution. Secretaries of county societies can secure supplies by writing to the Secretary, Council on Health and Public Instruction, American Medical Association, 535 Dearborn Ave., Chicago.]

### Second Month—Fourth Weekly Meeting

ACUTE TRAUMATIC ABSCESS OF BRAIN[1]

PATHOLOGY: Compound fracture, injury to meninges and cortex, character and quantity of pus, changes in meninges and cortex, granulation and cicatrization.

1. Starr: Medical Record, March 10, 1906. Spiller: Univ. of Penn. Med. Bull., October, 1906. Ballance: Surgery of the Brain. Macewen: Brit. Med. Jour., July 30, 1904.

SYMPTOMS: Local evidences of sepsis, pulse and temperature, focal symptoms. Differentiate from meningitis.

TREATMENT: Indications for operative treatment.

CHRONIC TRAUMATIC ABSCESS OF BRAIN

PATHOLOGY: Secondary to pus in skull, foreign bodies, ear, nose, thorax. By metastasis. Sinus-thrombosis. Location of abscess, abscess membrane, mode of extension, rate of growth.

SYMPTOMS: (1) Primary symptoms, cause and significance. (2) Latent period, length, usual symptoms. (3) Secondary symptoms. (4) Terminal period.

TREATMENT: Indications for exploring or trephining.

TUMORS OF BRAIN[2]: VARIETIES, PATHOLOGY AND INCIDENCE

General Symptoms: Headache, optic neuritis, vomiting, giddiness, mental disturbance. Papilledema.[3]

Localizing Symptoms: (a) Central motor area, signal symptom, extension, paralysis or anesthesia. (b) Prefrontal region, mental symptoms, later symptoms. (c) Parieto-occipital lobe, aphasia. (d) Occipital lobe. (e) Temporal lobe. (f) Basal ganglia. (g) Pons and medulla. (h) Cerebellum.

TREATMENT: Indications for cerebral decompression.[4]

### Monthly Meetirg

Indications for Operative Treatment of Fractures of the Base of the Skull.

The Operability of Tumors of the Brain.

Indications for Cerebral Decompression and Technic.

## *Medical Education and State Boards of Registration*

### COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, November 14. Sec., Dr. F. T. Murphy, Brinkley; Homeopathic, Little Rock, November 14. Sec., Dr. P. C. Williams, Texarkana.

CONNECTICUT: Regular, City Hall, New Haven, November 14. Sec., Dr. Charles A. Tuttle, 196 York Street; Homeopathic, Grace Hospital, New Haven, November 14. Sec., Dr. Edwin C. M. Hall, New Haven; Eclectic, Hotel Garde, New Haven, November 14. Sec., Dr. Thomas S. Hodge, 19 Main Street, Torrington.

FLORIDA: Regular, Jacksonville, November 7-8. Sec., Dr. J. D. Fernandez.

LOUISIANA: Homeopathic, New Orleans, November 13. Sec., Dr. J. T. Crebbin, 1207 Maison Blanche Building.

MAINE: City Council Rooms, Portland, November 14-15. Sec., Dr. F. W. Searle, 776 Congress Street.

MASSACHUSETTS: State House, Boston, November 14-16. Sec., Dr. Edwin B. Harvey.

NEVADA: Carson City, November 6. Sec., Dr. S. L. Lee.

TEXAS: Forth Worth, November 28. Sec., Dr. J. D. Mitchell.

WEST VIRGINIA: Hotel Waldo, Clarksburg, November 13-15. Sec., Dr. H. A. Barbee, Point Pleasant.

### Kansas June Report

Dr. H. A. Dykes, secretary of the Kansas Board of Medical Registration and Examination, reports the written examination held at Topeka, June 13-15, 1911. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 66, of whom 46 passed and 20 failed, including one chiropractic. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent. |
|---|---|---|---|
| University of Colorado | | (1911) | 93 |
| Howard University, Washington, D. C. | | (1910) | 92 |
| Chicago College of Medicine and Surgery | | (1911) | 83 |
| Illinois Medical College | | (1910) | 87 |
| College of Physicians and Surgeons, Chicago | | (1909) | 91 |
| University of Kansas (1911) 77, 78, 80, 81, 83, 83, 86, 86, 87, 87, 87, 88, 88, 89, 90, 93. | | | |
| Kansas Medical College (1894) 78; (1911) 78, 80, 84, 84, 85, 85, 86, 87. | | | |
| College of Physicians and Surgeons, Kansas City | | (1904) | 77 |
| University of Louisville | | (1911) | 76 |
| University of Michigan, Dept. of Med. and Surg. | | (1885) | 86 |
| Eclectic Medical University, Kansas City | | (1904) | 78 |
| Washington University, St. Louis | | (1910) | 87 |
| Kansas City Medical College | | (1900) | 79 |
| University Medical College (1908) 76; (1910) 85; (1911) 78, 79, 79, 84. | | | |
| Kansas City Hahnemann Medical College | | (1911) | 77 |
| Creighton Medical College | | (1911) | 86 |
| Leonard School of Medicine | | (1910) | 76 |
| Western Pennsylvania Medical College | | (1896) | 82 |

| College | FAILED | Year Grad. | Total No. Examined. |
|---|---|---|---|
| Bennett Medical College | | (1909) | 1 |
| Kansas Medical College | | (1911) | 2 |
| University of Louisville | | (1911) | 1 |
| Ensworth Medical College | | (1908) | 1 |
| Central Medical College, St. Joseph | | (1896) | 1 |
| St. Louis College of Physicians and Surgeons | | (1910) | 3 |
| Kansas City Hahnemann Medical College | | (1909) | 1 |
| University Medical College, Kansas City | | (1911) | 3 |
| St. Louis University | | (1903) | 1 |
| Eclectic Medical University | (1908) (4, 1911) | | 5 |

### Nebraska August Report

Dr. E. Arthur Carr, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, August 9-10, 1911. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 15, of whom 14 passed and 1 failed. Nine candidates were licensed through reciprocity. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent. |
|---|---|---|---|
| College of P. & S., Chicago | (1892) 76.5; | (1911) | 78.5 |
| University of Maryland | | (1911) | 84.5 |
| Missouri Medical College | | (1893) | 87.5 |
| Ensworth Medical College | | (1911) | 77.4 |
| Lincoln Medical College | (1909) 89; | (1911) | 78.7 |
| Creighton Medical College | (1911) 76.9, 82, 83, | | 87.5 |
| Jefferson Medical College | | (1901) | 84.9 |
| Meharry Medical College | | (1911) | 77.6 |
| Marquette University | | (1910) | 89.2 |

| College | FAILED | Year Grad. | |
|---|---|---|---|
| Lincoln Medical College | | (1911) | 70.7 |

| College | LICENSED THROUGH RECIPROCITY | Year Grad. | Reciprocity with |
|---|---|---|---|
| University of Iowa, Homeopathic College | | (1910) | Iowa |
| University of Michigan, College of Medicine | | (1901) | Iowa |
| Barnes Medical College | (1911) Illinois; | (1911) | Missouri |
| Kansas City Hahnemann Medical College | | (1910) | Missouri |
| Lincoln Medical College | | (1907) | Kansas |
| Jefferson Medical College | | (1907) | Ohio |
| Chattanooga Medical College | | (1896) | Kansas |
| Meharry Medical College | | (1909) | Tennessee |

### Texas Reciprocity Report

Dr. J. D. Mitchell, secretary of the Texas State Board of Medical Examiners, reports that 57 candidates have been licensed under the reciprocity provision since Feb. 10, 1911. The following colleges were represented:

| College | Year Grad. | Reciprocity with |
|---|---|---|
| University of Arkansas | (1910) | Arkansas |
| George Washington University | (1906) | Dist. Colum. |
| Northwestern University Medical School, (1902) (1908) (1910) (1911) | Illinois | (1908) Minnesota |
| Chicago Homeo. Med. Coll. | (1892) | Wisconsin; (1888) Iowa |
| College of Physicians and Surgeons, Chicago (1900) (1905) (1907) (1908) (1909) | | Illinois |
| Hahnemann Med. Coll. and Hospital, Chicago | (1903) | Illinois |
| Rush Medical College | (1901) | Iowa; (1903) Illinois |
| University of Iowa, College of Medicine | (1907) | Iowa |
| Keokuk Medical College | (1899) | Wisconsin |
| Kansas Medical College | (1905) | Kansas |
| Kentucky School of Medicine (1889) (1890) (1897) (1901) | | Kentucky |
| Hospital College of Medicine, Louisville | (1903) | Indiana |
| University of Louisville | (1890) (1909) (1910) | Kentucky |
| Tulane University of Louisiana | (1911) | Arkansas |
| Baltimore Medical College | (1907) | W. Virginia |
| University of Michigan, Dept. of Med. and Surgery (1883) Missouri; (1893) Michigan. | | |
| Washington University, St. Louis | (1901) | Missouri |
| Ensworth Medical College | (1897) | Nebraska |
| Missouri Medical College | (1883) | Missouri |
| St. Louis University | (1896) | Kansas |
| Barnes Medical College | (1901) | Missouri |
| St. Louis College of Physicians and Surgeons | (1901) | Missouri |
| Creighton Medical College | (1905) (2, 1911) | Nebraska |
| Lincoln Medical College | (1904) | Nebraska |
| University and Bellevue Hospital Med. Coll. | (1901) | Kentucky |
| Starling Medical College | (1898) | Ohio |
| Cleveland University of Medicine and Surgery (1894) (1894) West Virginia. | | |
| Miami Medical College | (1905) | Ohio |
| University of Pennsylvania | (1910) | Maryland |
| Jefferson Medical College (1906) Illinois; (1906) West Virginia; (1909) District of Columbia. | | |
| Vanderbilt University | (1881) Maryland; (1906) | Missouri |
| University of Texas | (1910) | Missouri |
| Marquette University | (1910) | Wisconsin |
| University of Toronto, Ontario | (1910) | W. Virginia |
| University of Naples, Italy | (1893) | Nevada |

2. Frazier: Prog. Med., March, 1908. Horsley: Brit. Med. Jour., Dec. 10, 1910. Frazier: Am. Jour Med. Sci., February, 1904.

3. Therapeutic Gazette, July 15, 1909. THE JOURNAL A. M. A., Sept. 11, 1909.

4. Spiller and Frazier: THE JOURNAL A. M. A., Sept. 22, 1906. Horsley: Brit. Med. Jour., Aug. 25, 1906. Ballance: Trans. Am. Surg. Assn., 1906.

## Book Notices

A MANUAL OF PATHOLOGY AND MORBID ANATOMY. By T. Henry Green, M.D., F.R.C.P., Consulting Physician to Charing Cross Hospital, and to the Brompton Hospital for Consumption and Disease of the Chest. Eleventh Edition. Revised and Enlarged by W. Cecil Bosanquet, M.A., M.D., F.R.C.P., Assistant Physician (Late Pathologist) to Charing Cross Hospital and to the Brompton Hospital for Consumption and Diseases of the Chest. Cloth. Price, $4.50 net. Pp. 642, with 350 Illustrations. Philadelphia: Lea & Febiger, 1911.

The alterations in the contents of this book since the last edition are not inconsiderable owing to the many noteworthy advances made in pathology since the last edition was published, six years ago. Much more space is given to the chapters on parasites and tumors and new matter is added, although it is rather doubtful whether the pathology of affections of the skin can be presented adequately in the few pages here allotted to this subject. Acne and psoriasis are the only two skin affections considered. Only half a page is given to the spleen and two pages to the lymph structures. The chapter on bone does not even mention fragilitas ossium or osteomyelitis, although tuberculous osteomyelitis is discussed in the chapter on tuberculosis. Rickets and achondroplasia are the only two conditions described under bone. One paragraph disposes of the pathology of the hypophysis cerebri. The adrenals and thymus are not mentioned. As for the joints, their pathology is disposed of in a two-page discussion of gouty and rheumatoid arthritis. The diseases of the blood are merely touched on. In fact, all that portion of the book, about 200 pages, devoted to the diseases of special tissues and organs is incomplete; many topics being omitted and others merely mentioned. The author has given most of his attention to parasites and tumors. They are discussed in a thorough and able manner. In short, as a book on general pathology this work possesses many admirable features; as a book on special pathology, it is not altogether satisfactory.

PRACTICAL MEDICAL CHEMISTRY FOR PHYSICIANS AND STUDENTS. By Charles Platt, A.C., M.D., Ph.D., and William A. Pearson, Ph.C., Ph.D., Analytical and Consulting Chemist. Sixth Edition. Cloth. Price, $2.50 net. Pp. 254. Philadelphia: John Jos. McVey, 1229 Arch Street, 1911.

This work is evidently intended to be a combination of encyclopedic text-book and laboratory manual. Apparently it endeavors to include a smattering of all of the knowledge of chemistry required by medical students and physicians. It is obvious that the numerous subdivisions of chemistry, an understanding of which is necessary to the physician, cannot be treated adequately in a work of this size. As an example of the inadequate treatment of the subject-matter, it may be mentioned that the general subject "glucosids" is disposed of in nine lines, notwithstanding that the glucosids are of constantly increasing importance in therapy and toxicology. More attention is devoted to urinalysis than to any other subject, the essentials of a moderately complete examination being given together with suggestions as to the clinical significance of the results obtained.

MENINGITIS, SINUS THROMBOSIS, AND ABSCESS OF THE BRAIN. With Appendixes on Lumbar Puncture and its Uses and Diseases of the Nasal Accessory Sinuses. By John Wyllie, M.D., Author of "Tumors of the Cerebellum." Cloth. Price, $3 net. Pp. 258. New York: Paul B. Hoeber, 1911.

This little volume is written from the view-point of the internist and not from that of the surgeon, although the major part of it deals with purely surgical subjects. The first two chapters, on "Meningitis" and "Thrombosis of the Cerebral Sinuses," respectively, are rather meager and not very satisfactory. The chapter on "Intracranial Abscess" is much better and some useful points may be found under "Differential Diagnosis." The author, not being a surgeon, does not take up the treatment but says, "The only possible treatment is operation, the management of which does not form part of this work." Omitting therefore such an important phase of the subject, the work must prove more or less unsatisfactory to those consulting it. A brief appendix on "Lumbar Puncture" and one on "The Nasal Accessory Sinuses" concludes the volume.

## Medicolegal

### Religious Belief no Defense for Parent's Failure to Furnish Medical Treatment for Child

*(Owens vs. State (Okla.) 116 Pac. R. 345)*

The Criminal Court of Appeals of Oklahoma affirms a conviction of the defendant Owens of violating the law by wilfully omitting, without lawful excuse, to furnish medical attendance to his minor child. The court holds that, under the statutes of that state, it is the duty of a parent having the custody of a minor child to support and educate such child; that such "support" includes necessary medical attendance to preserve the health and life of such child; that a reasonable construction of the statutes requires the furnishing of medical treatment in such a manner and on such occasions as an ordinarily prudent person, solicitous for the welfare of his child and anxious to promote his recovery, would provide it.

In a prosecution for a violation of that section of the statutes which provides, "Every parent of any child who wilfully omits, without lawful excuse, to perform any duty imposed on him by law to furnish necessary food, clothing, shelter or medical attendance, for such child, is guilty of a misdemeanor," an instruction of the trial court that religious belief will not constitute a defense to such prosecution is correctly given. The question of the necessity for medical treatment is a question of facts for the jury in any case for the violation of the statute, and when submitted under proper instruction of the court a finding of the jury, contrary to the contentions of an accused, will not be disturbed on appeal, when the evidence tends reasonably to support the finding.

In this case it appeared that the defendant's child was afflicted with typhoid fever, and that the county health officer and other physicians and neighbors of the accused called on and endeavored to induce him to permit the child to be attended by physicians and nurses, and he refused to do so, even though the medical attendance was offered without expense. In the testimony of the accused, he admitted that he was acquainted with the serious nature of typhoid fever, and knew that his child was seriously ill, and offered no excuse for his conduct, but the testimony on behalf of the state, and by the mother of the child, who testified on behalf of the accused, disclosed that the reason for refusing to provide medical attendance was on account of religious belief.

The court says that, under the Oklahoma statutes, it is the duty of the parent, regardless of his religious belief or superstition, to furnish necessary food, clothing, shelter and medical attendance to his child. A reasonable construction of these statutes would be that the parent is required to furnish the necessary food, clothing, shelter and medical attendance looking to the preservation of the health, as well as the life, of the child. The law does not contemplate the calling of a physician or the furnishing of medical attendance for every trivial complaint with which a child may be afflicted. A reasonable amount of discretion is vested in the parents charged with the duty of maintaining and bringing up of infant children. As before stated, the correct rule would require the furnishing of medical treatment in such a manner and on such occasions as an ordinarily prudent person, solicitous for the welfare of his child and anxious to promote its recovery, would provide.

The proposition that religious belief constitutes no defense for violation of a penal statute has been repeatedly announced by the courts in construing various other statutes, principally the violation of statutes on Sabbath breaking. The reasons given in those cases support the position of the court in this case. If religious belief would be a defense to the violation of the statute quoted it would necessarily follow that it would be a defense to the violation of the statutes against Sabbath breatking, and the statutes against polygamous marriages, and various other wholesome penal laws.

In this case, every act necessary to constitute the crime was knowingly done, and the crime was therefore "knowingly committed." The accused in his testimony admitted knowl-

edge of the seriousness of typhoid fever; admitted that his child was seriously ill; and did not deny that the physician offered treatment and nurses free of expense; yet he refused to permit the child to receive the care and attention offered, and which it clearly needed. He was advised by the county health officer that he was laying himself liable to prosecution; yet he persisted in refusing aid for the child. A case of more wanton neglect could hardly be found. There was neither ignorance of fact nor ignorance of law in this case.

In this case the constitutionality of the statute involved was not raised. The authorities cited, however, clearly established the validity and wisdom of the law. The court concludes that the instruction of the trial court, advising the jury that religious belief constitutes no defense under the statute, was correct.

The question of the necessity of medical attendance would be a question of fact for the jury. That question was submitted to the jury, and they found against the accused, and properly so under the record. Under the law in this state, there is probably no way of reaching an adult who refuses to accept medical aid for himself on his own responsibility; but under the statute quoted, persons will not be permitted to allow innocent children, dependent on them, to suffer for the lack of necessary food, clothing, shelter or medical attendance. And the law contemplates the administering of such aid for the protection of the health, as well as the life, of the child.

### Liability of Oral Promisor of Payment for Services for Another

*(May vs. Roberts (Okla.), 115 Pac. R. 771)*

The Supreme Court of Oklahoma says that the defendant said to the plaintiff, a physician, "I want you to go to that little house [pointing same out]; my tenant's wife, Mrs. B., is sick there, and I want you to look after her and take care of her." The plaintiff asked him about the pay, and he said, "I will see that it is paid." It was in answer to the plaintiff's question about pay for such service as he might render to Mrs. B. that he said, "I will see that it is paid." It was error to exclude this evidence from the jury. The evidence was competent and material for the consideration of the jury, in connection with all the facts and circumstances proved, to determine whether the liability created was primary or collateral. The question was whether, under all the evidence, the credit was given solely to the defendant, or to the husband of the woman who was to be treated by the plaintiff, with the understanding that, if the husband did not pay the charge, then the defendant would. If the former, that is, if the defendant's liability was primary, such verbal contract was valid, and the defendant was liable. But if the intention was that the husband of Mrs. B. should be primarily liable, and that the defendant's liability should be only collateral (that is, to answer in case of the husband's default) then the contract was void as within the statute of frauds, which requires promises to answer for the debts of others to be in writing. There might also be a question as to whether there was not a joint liability, that is, whether the husband of Mrs. B. and the defendant were not jointly to be liable.

### Liability for Death from Delirium Tremens Precipitated by Injury

*(McCahill vs. New York Transportation Co. (N. Y.), 94 N. E. R. 616)*

The Court of Appeals of New York affirms a judgment holding the transportation company liable for the death of a man who died from delirium tremens on the second day after being struck by one of the defendant's taxicabs and being thrown about 20 feet, having his thigh broken and his knee injured. He was removed to a hospital and a physician testified that when he was brought there he was unconscious, or irrational rather than unconscious, rapidly developed delirium tremens, and it could be said with reasonable certainty that the injury precipitated his attack of delirium tremens. Of course, it was undisputed, the court says, that the injuries could not have led to delirium tremens except for the preexisting alcoholic condition of the man, and under these circumstances the debatable question in the case was whether the company's negligence was, legally speaking, the proximate cause of his death. The court holds that it was.

The real proposition, however, urged by the company was that it should not be held liable for the results which followed its negligence, either, first, because those results would not have occurred if the man had been in a normal condition; or, secondly, because his alcoholism might have caused delirium tremens and death at a later date even though the company had not injured him. But that proposition could not be maintained in either of its branches, which were somewhat akin.

The principle has become familiar in many phases that a negligent person is responsible for the direct effect of his acts, even if more serious, in the cases of the sick and infirm as well as in those of healthy and robust people, and its application to this case was not made less certain because the facts were somewhat unusual and the injured man's prior disorder of a discreditable character. The principle is also true, although less familiar, that one who has negligently forwarded a diseased condition, and thereby hastened and prematurely caused death, cannot escape responsibility, even though the disease probably would have resulted in death at a later time without his agency. However, it is easily seen that the probability of later death from existing causes for which a defendant is not responsible may be an important element in fixing damages in such a case, but it is not a defense.

## Society Proceedings

### COMING MEETINGS

American Public Health Association, Havana, Cuba, Dec. 4-9.
Southern Medical Association, Hattiesburg, Miss., Nov. 14-16.
Southern Surg. and Gynecol. Assn., Washington, D. C., Dec. 12-14.
Western Surg. and Gynecol. Assn., Kansas City, Mo., Dec. 18-19.

### MISSISSIPPI VALLEY MEDICAL ASSOCIATION

*Thirty-Seventh Annual Meeting, held at Nashville, Tenn., Oct. 17-19, 1911*

The President, DR. ROBERT H. BABCOCK, Chicago, in the Chair

Addresses of welcome were delivered on behalf of the local profession by Dr. George H. Price, Nashville, and, on behalf of the citizens of Nashville, by Mr. W. R. Cole. These were responded to on behalf of the association by Dr. Albert E. Sterne, Indianapolis.

The following officers were elected: president, Dr. Louis Frank, Louisville, Ky.; vice-presidents, Drs. Albert E. Sterne, Indianapolis, and F. William Werner, Joliet, Ill.; secretary, Dr. Henry Enos Tuley, Louisville, Ky. (reelected), and treasurer, Dr. Samuel C. Stanton, Chicago (reelected).

#### Pellagra: Its Epidemiology

DR. R. M. GRIMM, of the Marine-Hospital Service said: An investigation was made during August, 1911, in the counties of Whitley, Knox and Bell, Kentucky. The total number of cases was 140. Only sixteen were living in the homes at which they resided at the time when they noticed the first symptoms of the disease. With one exception, the families of the sixteen pellagrins gave a history of using surface or spring water. No observations were made which would lead one to suspect that the disease is hereditary. So far as I was able to determine, corn products in one form or another had been used exclusively by all of the pellagrins. The cornmeal used by the families of the miners in this region is obtained almost exclusively from the stores of the coal mining companies. The cornmeal was not of the best quality.

#### The Prevention and Eradication of Bubonic Plague

DR. W. C. RUCKER, San Francisco: Plague is primarily a disease of rodents and secondarily and accidentally a disease of man. Man's safety from the disease lies in the exclusion of the rodent and his parasites. This is the basis of all preventive and eradicative work. If man can live in rodent-free surroundings he need have no fear of plague, because if there are no rodents there can be no rodent parasites, and for

all practical purposes the flea may be considered as the common vector of the disease from rodent to rodent and from rodent to man. The eradication of bubonic plague, therefore, means the eradication of rodents.

In the city the fight is directed against the rat and its parasites and aims to prevent the spread of the disease from them to man. In the country two measures follow the same general lines as in the city and are modified only to meet the existing conditions, such as the species of the rodent to be combated, the density of the population, and the different character of the buildings. The work of prevention is directed against the rodent and its parasites lest they import and nourish the seeds of pestilence, later to distribute them to mankind.

### Preventive Vaccination Against Typhoid Fever

DR. W. S. HARPOLE, Chicago: Vaccination has been done in many hospitals and asylums, where nurses, patients, doctors have been protected. Notable are the experiences of Richardson and Spooner in the Massachusetts General Hospital. From 1902 to 1906, twenty-six nurses contracted typhoid fever, and for each case of typhoid fever treated a nurse contracted the disease. In 1909 and 1910, under vaccination, no cases of typhoid occurred among the nurses. The experiences of our army and of hospitals and asylums are sufficiently convincing of the value of this vaccination. Typhoid vaccination is done by the injection of killed cultures of the typhoid bacillus. The germs are usually killed by heat. All persons who are in contact with typhoid cases, as physicians, nurses, hospital attendants and laboratory workers, should be vaccinated. Children and young people going to the country for the summer should be protected.

### Typhoid Vaccines in the Chronic Infection

DR. WILLARD J. STONE, Toledo, O.: Not only should individuals who are typhoid-carriers receive appropriate vaccine treatment, but all individuals including physicians and nurses, whose duties require the attendance and care of typhoid cases should receive immunizing treatment. By this procedure, many individuals otherwise destined to become chronic carriers might secure protection which would prevent in themselves the possibility of cholecystitis or other late manifestations as well as avoid the possibility of becoming a source of danger to others. Such treatment has been found efficient and productive of little discomfort. Nurses, orderlies and physicians should be regularly immunized at intervals of two or three years as should all others exposed to endemic or epidemic outbreaks. When typhoid bacilli have produced clinical or bacteriological evidences of cholecystitis, it is doubtful whether vaccine treatment will of itself be of avail, surgical drainage of the viscus then being indicated. On the other hand, appropriate vaccine treatment in individuals showing evidences of intestinal or urinary tract perpetuation of the bacilli, without cholecystitis, during convalescence from disease or subsequently, should be given the opportunity of vaccine treatment. Not all will be cured, but the bacilli will disappear in some instances. Chronic carriers, who have been treated by vaccines, should be under the control of the local board of health and furnished employment, if necessary, which would not require the handling of food products.

### Diseases Produced by the Colon Bacillus; Diagnosis and Treatment

DR. FENTON B. TURCK, Chicago: The etiology of diseases does not sufficiently interest the American physicians and surgeons, hence our remedial measures are directed to the treatment of symptoms, and frequently we find the surgeon content with the removal of gall-stones, appendices and ulcers, etc., without sufficient interest in the causes of these complaints. Consequently we find many discouraging reports of the end-results of many of these abdominal operations.

Not only surgical diseases but many medical diseases masquerading under various names are now recognized as colon bacillus diseases. Thus Trautner experiments with colon bacillus in rheumatism, Metchnikoff in arterial sclerosis, Opie in hepatic cirrhosis. Migraine and neurasthenic conditions are often associated with increased indican which is chiefly the result of activity of bacillus coli in the intestine. Aside from the usual methods, the diagnosis rests on obtaining active cultures of *Bacillus coli* from the cecum (first clearing the lower bowel and allowing the tube to remain in the bowel until the contents from the cecum and also the ileum pass into a culture tube). A pure culture injected intraperitoneally into a rat indicates the virulence of the *Bacillus coli* used by death of the rat or mouse in a few hours. A test vaccine is used to determine the degree reaction of the patient when injected subcutaneously into the patient.

The treatment is directed first to the reduction of the virulency of the colon bacillus in the intestines by dietetic measures and the restoration of the functions of the stomach and intestines, especially the motor functions, and second to the increase of the means of defense by increasing the antibodies in the blood and tissues of the patient. Autogenous vaccines are introduced subcutaneously, intravenously, by mouth, colon or into the bladder or pelvis of the kidney as the case may require. This combined method has been beneficial in patients who have failed to obtain relief after operation for ulcer of stomach and duodenum, for gall-bladder disease, for removal of appendix, etc. It is over three years since this combined method of treatment was first used, and it seems to prove that the cures are permanent where the treatment is completely carried out.

*(To be continued)*

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## MEDICAL SOCIETY OF PENNSYLVANIA

*Sixty-First Annual Meeting, held at Harrisburg, Sept. 25-28, 1911*

*(Continued from page 1390)*

### Lodge Practice

DR. HORACE M. ALLEMAN, Hanover: Have we any economic conditions justifying lodge practice? The difference between legitimate contract practice and lodge practice should always be remembered in discussing this subject. The effect on the physician so engaged is detrimental to good work and is a hindrance to his advancement in his profession. The membership in these lodges is increased by openly advertising free medical treatment. Thus, the profession is used for a two-fold purpose.

DISCUSSION

DR. GEORGE E. HOLTZAPPLE, York: The question is how to check this pernicious practice. I believe that it will resolve itself into a personal effort on the part of every physician to help create a proper sentiment against this evil.

DR. CHARLES J. CUMMINGS, Williamsport: The state society ought to have a constitutional provision that no county society shall be a component part of it unless said county society bars lodge practice. Then we shall be getting at the thing in a common-sense way.

DR. ISRAEL CLEAVER, Reading: As a cure, I would suggest that the lodges put the money paid by their members for this purpose into a fund from which to pay any physician the member may choose to employ his regular fee.

DR. STERLING D. SHIMER, Easton: In our county society, we finally adopted the rule that no member should accept any contract work for less than the regular fee. My contract work is paid in this way, but I get nothing extra for night work.

### The Value of a Library to a County Medical Society

DR. JAMES M. ANDERS, Philadelphia: There are great advantages in having an independent medical library in each county society, as the working library is an important factor in medical progress. Reference books and medical periodicals are indispensable to the young physician as a source of knowledge and inspiration. The responsibility for establishing such libraries devolves on the members of the county societies. A special committee, cooperating with the secretary of the county society, who should also be the librarian, could raise a fund for this purpose with the aid of a small assessment. A small amount of this money should be appropriated to the purchase of books to keep the library up to date. Experience proves that not less than three-quarters of the books in large medical

libraries are donated. In every county a suitable room could be found, as the result of patient effort. The present methods of transportation make it possible for the members to reach some central place easily, especially if the library is made the meeting-place of the society, so that books and periodicals could be taken out and returned at the time of the meeting.

DISCUSSION

DR. THOMAS A. JAMES, Ashley: The Luzerne County Society started with a very small library, and now has over 6,000 volumes. Every member has a key, and can use the library at any time for reading. Most of the volumes have come by donation, and the duplicates we have traded with other societies. We pay $10 a year dues.

DR. JAMES TYSON, Philadelphia: The journals should be allowed to circulate from one member to another, without requiring a man to go several miles to a center and return them. They could be sent by mail.

DR. JOHN B. CARRELL, Hatboro: In a county such as ours, which is 40 miles long and 20 miles broad, how would members so remote from this library have access to it? I would suggest having a library section of the society, and having each man who wished to belong to it contribute a certain amount of money.

### Municipal Milk-Supply

DR. ERNEST J. LEDERLE, New York: We have come to believe in New York City that the only way to guarantee the safety of the milk-supply is to require pasteurization of all but certain grades of high-priced milk. We have adopted a plan for the official grading of milk into three classes: milk for infants; milk for adults, and milk for cooking and manufacturing. Milk used for the latter purposes does not require painstaking inspection, but it must be pasteurized, because one cannot be sure that it will be put to these uses.

### Milk and Its Relation to Public Health

DR. PERCIVAL J. EATON, Pittsburgh: Clean, raw milk is recognized to be better as a food than either sterilized or pasteurized milk. Raw, clean milk, modified to suit the individual infant, is the best of the substitute foods. Because of the possibility of infection of man by the bovine tubercle bacillus, tuberculosis among cattle should be eradicated. On account of its known rôle as a disease-carrier, the production of all milk should be constantly watched by competent inspectors. The great value of milk depots is their relation to the morbidity and mortality of infants and young children. I would make a plea for the more general recognition of the economic rights of the producer, and for the education of the masses to the belief that a good product deserves and should obtain a good price, and that the best is none too good for the children.

DISCUSSION

DR. JOHN B. CARRELL, Hatboro: It might as well be understood by the residents of cities that the price of such milk as is desirable, not only for infants but also for adults, must be advanced. It is an impossibility for the farmer to produce with profit the kind of milk that should be used, unless the distributor and his profit are done away with.

DR. JAMES M. ANDERS, Philadelphia: I do not believe that we shall have a good milk-supply until a prolonged campaign of education is carried on among the farmers and dairymen. There is a method by which milk can be produced with comparative cheapness. By means of the cow-testing associations, the farmer can separate the profitable from the unprofitable cows and get rid of the latter, of which most farmers carry a large percentage. It is of importance for the farmers also to learn the proper time and the best method of cooling the milk, as well as the best manner of straining it.

DR. DAVID P. RETTEW, Coatesville: I believe in raising the price of milk. One cent a quart added to the present price would probably make its production profitable. I doubt whether doing away with the distributor and putting the distribution of the milk-supply in the hands of the municipality would work well in certain cities. There must, however, be better business methods of distribution.

DR. HENRY C. WESTERVELT, Pittsburg: Milk has very materially improved in quality and cleanliness without any tremendous increase in the price. You are paying 8 or 10 cents a quart for milk that is better than what you paid the same price for three or four years ago. The farmer is not using more men but merely making them do their work better. I believe in a campaign of enlightenment but not of the dairymen or middlemen. I enlighten the mothers, and they promptly enlighten the men who furnish the milk for their sick babies. Any mother can send a specimen of the milk furnished to our municipal laboratory and get a report on it without the knowledge of the dealer.

### A New Sign in the Diagnosis and Treatment of Ulcer and Carcinoma of the Stomach

DR. EDWIN ZUGSMITH, Pittsburgh: A sign of gastric ulcer and carcinoma, which I believe has not heretofore been described, is an abnormal dulness to percussion in the second interspace extending for a variable distance on both sides the sternum. In observations extending over a period of one year, I have noted the presence of this sign in cases of gastric ulcer and much more positively in cases of gastric cancer. Unless the percussion stroke is very delicate, the sign will not be found, for the dulness will be obscured by lung resonance. On the healing of the ulcer the dulness disappears. I believe that this dulness is directly due to enlargement of the lymph-nodes lying along the sternum.

### The Relation of the Streptococcus to Scarlet Fever with Active Immunization by Means of Streptococcic Bacterins

DR. JOHN A. KOLMER, Philadelphia: Among the various organisms considered as the probable cause of scarlet fever streptococci have received the most study and attention, although they are regarded as secondary invaders and responsible for a high proportion of the complications. If streptococcic bacterin prevents scarlet fever, then streptococci bear a much closer relation to that disease than we are willing to admit. Our inoculations, however, with the heat-killed streptococcic bacterin did not prevent scarlet fever. As scarlet fever is probably not due to the streptococcus, that organism being responsible only for the complications, the streptococcus bacterin may prevent a severe attack of scarlet fever by producing an immunity against secondary streptococcus infections.

### The Treatment of Cardiac Arhythmia

DR. GEORGE W. NORRIS, Philadelphia: The forms of cardiac arhythmia are: (1) Sinus arhythmia, in which the normal inspiratory pulse acceleration and expiratory retardation become exaggerated. This may be symptomatically abated by atropin, but direct treatment is rarely necessary. Rest, diet, hydrotherapy and massage constitute our chief line of defense. (2) Extrasystolic arhythmia, in which one or more beats are dropped, which usually results from accentuated myocardial excitability, although it may be due to heart-block or diminished excitability. When temporary, it needs no treatment; when persistent, treatment consists in lessening the work required of the heart muscle. (3) Auricular fibrillation. It is this variety which so often goes hand in hand with the broken compensation of old rheumatic valvular lesions. These patients require rest, sleep, attention to diet and exercise. When the compensation is bad, absolute rest with laxatives and restricted dry diet will often produce many beneficial results. It is in auricular fibrillation that digitalis accomplishes its most brilliant results. (4) Heart-block, which is due to a depression of conductivity. For the serious form of heart-block seen in myocardial disease no definite rule can be laid down. In incomplete block, atropin, in liberal doses, often arrests the condition. Digitalis is contra-indicated. If heart-block is complete, digitalis may be beneficial. (5) Pulsus alternans, which is due to depression of contractility, a condition which can be inferred when we find an alternating pulse or a half frequency pulse. As this is an expression of exhausted or degenerated myocardium, little can be expected by any direct treatment. The treatment may be said to be that of myocarditis in general.

### Case of Massive Pericardial Effusion

DR. THOMAS W. KAY, Scranton: During the past winter five cases of pericardial effusion have come under my observation. In one case at least 4,000 c.c. of fluid were present. The gravity of the case depends not on the quantity of fluid but on the intrapericardial pressure. Paracentesis pericardii is done easily and gives prompt relief, but is usually not permanent. By it one is never able to draw off all the fluid. Excellent results are claimed as a result of passing a trocar into the pericardium and introducing a rubber catheter through the cannula well below and to the rear of the heart. Thoracotomy with incision and drainage of the pericardial sac has been reported to give good results.

DISCUSSION

DR. A. STENGEL, Philadelphia: There is one feature of this discussion which must appeal to all of us in our everyday work and that is the matter of diagnosis as between the serious and the trivial forms of irregularity of the heart. The treatment of cardiac irregularities is infinitely more unimportant than the diagnosis, because, after all, the trivial forms take care of themselves in the long run and the other forms are serious and will remain serious, even in spite of treatment, though they may be helped. The matter of diagnosis is of importance mainly because a proper recognition of the forms that are unimportant may lead to permission to the patient to follow a mode of life that in the end rids him of the trouble; or, on the contrary, if the physician looks on it as serious and gives a serious prognosis it would lead to hopeless invalidism. One ought to be very careful in making the prognosis in these cases. A good rule is that the more the patient is incommoded by subjective recognition of his cardiac irregularity, the greater is the triviality of his condition. The use of digitalis should be governed strictly by its effects, and we should recognize that in actual cardiac disease it sometimes, even in proper doses, does harm. In very large pericardial effusions, the fluid is mistaken for pleuritic fluid, and the aspiration is made far out in the left side and a fluid is obtained but it is really a pericardial effusion. As to the radical operation for pericardial effusion, I should say that it is desirable to have more evidence before we can unequivocally recommend this form of treatment for pericarditis. I should prefer to stick to the old paracentesis for the present.

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## MEDICAL ASSOCIATION OF THE SOUTHWEST

*Sixth Annual Meeting, held at Oklahoma City, Okla., Oct. 10-11, 1911*

The President, DR. M. L. PERRY, Parsons, Kan., in the Chair

### Officers Elected

The following officers were elected for the ensuing year: President, Dr. A. L. Blesh, Oklahoma City; vice-presidents, for Arkansas, Dr. T. B. Young, Springdale; for Missouri, Dr. H. S. Crossen, St. Louis; for Texas, Dr. B. N. Freeman, Nevada; for Kansas, Dr. W. S. Lindsay, Topeka; secretary-treasurer, Dr. F. H. Clark, El Reno.

Hot Springs, Ark., was selected as the place for holding the next meeting.

### Management of the Nervous Child

DR. M. L. PERRY, Parsons, Kan.: The nervous child is the father of the neurotic and neurasthenic adult, but granting this potentiality, it is also true that proper care during the developmental period will often prevent the occurrence of actual disease at a later date. It is not only the functional nervous conditions whose seed is sown in early life, but many preventable organic affections originate within or develop later on the ground work of nervous instability acquired in infancy or during the first few years. Under the term "nervous child" I include: 1. The precocious child, with its highly organized but poorly balanced nervous mechanism, who is capable of rather extraordinary mental effort along certain lines, but prone to an early breakdown. 2. The quick, alert, restless child, whose whole nervous system appears to be hypersensitive, whose mental faculties are so active that concentration is difficult, and who is largely reflex in type. 3. The shrinking and abnormally timid child, who is weak in nerve-force and therefore easily exhausted. 4. The backward child, who is slowed up mentally either on account of defective organs or special sense, or an inherent defect in correlating sense perceptions and forming ideas. In the care of such children the influence of nutrition and dietetics is of paramount importance. Malnutrition is a potent factor in the development of nervousness as well as in aggravating the condition when it exists. There is a crying need of reform in our educational system. A more thorough inspection of school children should be made, and school authorities should recognize the necessity of special class work in the public schools for defective children not ordinarily classified as feeble-minded.

### Pancreatitis: Suggestions as to Etiology and Surgical Treatment

DR. A. L. BLESH, Oklahoma City: Chronic pancreatitis in association with bile-tract infections is not uncommon. Without this association it is comparatively rare. When present, while it adds more or less to the symptom-complex, the clinical syndrome is so overshadowed by gall-tract infection that it is rarely diagnosed in the absence of a palpable enlargement of the head of the pancreas. Both pancreatic and gall-tract infections may be due to an infection from below, and this, in turn, may depend on a malformed colon, causing a high degree of coprostasis. The frequent association of pancreatic biliary infections, duodenopyloric ulcers, and chronic appendicitis is at least suggestive of a common exciting cause. In this train of sequences the fact that we never encounter an acute but always a chronic type of appendicitis, is of great theoretical and practical importance as, at least, hinting the etiology. Direct biliary and pancreatic drainage, or simple gastrojejunostomy, will not always cure the respective diseases but will always give temporary relief. This fact suggests that respective operations do not always measure up to the pathology and etiology. In properly selected cases, Lane's operation should be added. If done in time, perhaps the latter, in properly selected cases, would be sufficient.

DISCUSSION

DR. BACON SAUNDERS, Fort Worth, Tex.: There is one thing that impresses me, namely, the marked tendency to search for something wonderful every time the surgeon opens the abdomen for the relief of some intra-abdominal condition. It would be better not to look for these wonderful things when we operate. I have straightened out many of these kinks by removing the apparent pathologic condition. I have cured many cases of chronic pancreatitis by drainage of the biliary tract. I have had a great many cases in which things looked curious, but after removing well-known pathologic conditions the patients have recovered.

DR. J. H. RIDDELL, Enterprise, Kan.: When a surgeon opens the abdomen and finds bands of adhesions, if they have nothing to do with the pathologic condition he is going to correct, they should not be severed. If a surgeon should open my abdomen, I would not want him to remove any section of my anatomy that looks right, for fear it might give me subsequent trouble.

DR. JOHN F. BINNIE, Kansas City, Mo.: We should only remove the real pathologic condition that is causing the trouble; we should not take out an appendix that is not causing trouble.

DR. HOWARD HILL, Kansas City, Mo.: I have been having a series of cases of gall-bladder trouble, and in twelve out of thirty or forty cases there has been inflammation of the pancreas, and in most of them the appendix seems to have been affected primarily.

### Retrocecal Appendicitis

DR. J. N. JACKSON, Kansas City, Mo.: There are two anatomic positions of the appendix that are extremely unusual, and when the appendix is situated in either of them and is inflamed it gives rise to a different set of symptoms and leads to delay in diagnosis. These are the retroperitoneal and retrocecal types of appendicitis. In the surgical treatment in the retrocecal type, the incision should be made farther out than usual to avoid infection of the peritoneal cavity, possibly splitting the outer fold of the mesocolon so as to turn the colon over to the inside to get at the appendix behind. After

removal of the appendix, sometimes there is an abscess cavity to contend with, and the patient is subject to the usual infection following cellulitis. Instead of inserting a drainage tube, the cavity should be disinfected thoroughly with iodin or phenol (carbolic acid), followed by alcohol and packing. In cases in which an abscess has ceased to be local and has spread behind the intestine and peritoneum, under the colon, a counter-opening should be made to get drainage at the most dependent point.

DISCUSSION

DR. BACON SAUNDERS, Fort Worth, Tex.: In these cases of appendicitis the symptoms are so slight that they are frequently overlooked, but the patient does not get well. He develops a septic condition and the surgeon sees him one or two weeks afterward and finds out what the trouble is. In these cases I usually make the incision entirely outside of the colon, and in a large percentage of them it is necessary to resort to posterior drainage. A small drain will not do much good.

DR. H. C. CROWELL, Kansas City, Mo.: I have never seen a case in which the appendix is beneath the peritoneum. One of my patients, a girl of 12, who was subjected to the Ochsner treatment for twelve or fourteen days, had a retrocecal abscess. There was a very much distended space in this region. I cleaned out the abscess thoroughly, but the patient died immediately, and I believe death followed because in opening up and disturbing this abscess so effectually at the time, I liberated an undue number of toxins. I believe we frequently have sudden deaths following large abscesses by disturbing the relations and having absorption of the toxins. Had I opened the abscess in this case in a limited way and drained, I feel certain that the girl would have recovered.

DR. JOHN G. SHELDON, Kansas City, Mo.: In some of these cases in which the appendix is retroperitoneally located, there may be involvement of the ureters.

DR. J. D. WALKER, Caney, Okla.: A patient had typical symptoms of appendicitis, but when the abdomen was opened no inflammation could be found. In tracing the ascending colon down to its termination and finding its union with the small intestine, I found an organ about the size of a goose quill, which I took to be the appendix. I removed it, and the patient recovered.

DR. J. M. INGE, Denton, Tex.: It is important in these retroperitoneal conditions to go in back of the peritoneum, but how many surgeons, in making an incision, go far enough back to avoid the peritoneum? In some of these cases it is not good surgery to break up dense adhesions in the effort to find the appendix and remove it.

### Postoperative Ileus: Report of Case Relieved by Intestinal Puncture

DR. LEROY LONG, McAlester, Okla.: Following the removal of a cystic tumor on the right side, involving both tube and ovary, with an ectopic gestation in the left tube, the round ligaments were shortened on account of a retrodisplacement, and the appendix was removed. Several hours later intestinal obstruction occurred, which was relieved by puncture.

### Chronic Colonic Intoxication

DR. JOHN F. BINNIE, Kansas City, Mo.: Chronic intestinal stasis is exceedingly common; it gives rise to diverse and obscure symptoms, and is at least one cause of neurasthenia. It may be due to various causes, but the real etiology is yet unknown. Failure to obtain relief from symptoms of appendicitis after appendectomy is often due to the fact that appendicitis, if present at all, was merely an accident in the course of a case of chronic intestinal stasis. In every operation for chronic appendicitis, the surgeon ought to examine the whole cecum and the terminal segment of the ileum.

DISCUSSION

DR. H. C. CROWELL, Kansas City, Mo.: Some forms of intestinal stasis are benefited by attention to diet and medication, but a large number of patients suffer from chronic auto-intoxication and neurasthenia, on account of adhesions or interference with the peristalsis of the gastro-intestinal tract, and it is the duty of every surgeon who opens the abdomen to make a careful examination in every case to see if there exist adhesions that may interfere with proper peristalsis. In pericolitis I believe that the membrane is congenital, as it does not bear out the conditions, pathologically or histologically, of an inflammatory product.

DR. A. L. BLESH, Oklahoma City, Okla.: I do not believe we are dealing with a single pathologic condition, but with many. I was called to see a young man who was said to have appendicitis, and in the family at the time there was a case of typhoid. I found he had had several such attacks as he was then suffering from. They consisted in pain, more or less marked, without marked radiating tendencies, in the right iliac region, near McBurney's point. The man's condition at the time was one of profound toxemia. I was fearful that the soreness in the right side was due to a typhoid perforation at the lower end of the ileum. Since there was no danger from waiting, we waited and the condition cleared up. These cases are peculiar in that they do not have a febrile reaction. In other words, they are toxemic.

### Abdominal Drainage

DR. CHARLES BLICKENSDERFER, Shawnee, Okla.: In the ordinary cases, I prefer the small cigarette drain made by rolling gauze in gutta-percha tissue and thoroughly moistened in normal salt solution. The length is to be governed by the length of the drainage tract to be established. In thick, fat abdominal walls, a short drain of this character extending from the muscular fascia to the surface for a period of twelve hours will prevent mural abscess. Where pus is to be drained, a soft rubber tube of proper caliber may be wrapped with gauze and enveloped in rubber tissue. It is sometimes wise to have a strand of straight gauze lying within the central tube. This can be removed and replaced with others when necessary. In conclusion, the surgeon should not drain if it is possible to avoid doing so. He should not use dry gauze for drainage. He should not tuck or fold back and forth gauze to be used as a drain. Gauze packs are useful to control hemorrhage, but often act as plugs where drainage is sought. One should not use a long drain if a shorter one will suffice. The drain should be removed as soon as its service has been performed, remembering that in pus cases drains are useful for a much longer time than in relatively clean cases.

DISCUSSION

DR. JOHN F. BINNIE, Kansas City, Mo.: Instead of the familiar cigarette drain, it is a good plan to take some strands of ordinary wool, such as used in making thick socks, sterilize it, and use it with a hard rubber tube. It will be found to be better than gauze.

DR. W. J. JOLLY, Oklahoma City: In all wounds, if we have an idea that infection has taken place, the proper thing to do is to drain. I have closed wounds, not having any extra trouble at the time, but have had to reopen them, which is unsatisfactory.

DR. J. D. GRIFFITH, Kansas City, Mo.: If I want rapid exosmosis, I use sterile petrolatum mixed with normal salt solution. This, being of greater specific gravity than the exudate that is to come out, will produce exosmosis in the capillary attraction. I have been using it for some time and it cuts drainage short and gives me an abundance of drainage. If you put one-quarter sterile petrolatum on the gauze you will find the exudate will be increased very materially.

### Septic Infection

DR. W. J. JOLLY, Oklahoma City: In puerperal septicemia we are helpless so far as specific treatment is concerned. The local treatment usually used, curettage, is harmful and only opens up new avenues for the absorption of toxins, and aggravates the condition. While it is the ideal treatment in sapremia caused by a blood-clot or retained placenta, it is to be condemned in true septicemia. Serums, I believe, are worthless. A few patients get well under any treatment, but in my own experience serums do not modify the disease in the least. Our only treatment for the general septicemia is supportive—easily digested, nourishing food, and stimulants to sustain the patient until Nature manufacturers antibactericidal serums or opsonins to destroy the bacteria.

DISCUSSION

DR. S. M. MAYBERRY, Enid: I believe in the use of the curet in removing portions of retained placenta, and I think there are times when this instrument, if not properly used, would necessarily carry infection into the healthy muscular coat and do harm. When it comes to washing fresh wounds, after removing all foreign material, I favor the use of tincture of iodin and the application of a hot, moist boracic acid and 95 per cent. alcohol dressing.

DR. JOHN F. BINNIE, Kansas City, Mo.: Many years ago a Berlin surgeon made some investigations as to the sterilization of wounds, and unfortunately in the laboratory found that when bacteria had been in contact with a wound for so many seconds or minutes there was no use in trying to do anything. The bacteria were absorbed according to the laboratory experiments. This would have brought about to a large extent therapeutic nihilism if there had not been found "a nigger in the wood-pile" as regards these experiments. More recently Fredreick, carrying on similar experiments, found that bacteria in a freshly-made wound may be reached by aseptic or antiseptic means for a period of six or seven hours after the wound has been infected. Our methods of treatment of fresh wounds have changed in the last few years.

### Do You Do Your Duty in the Obstetric Chamber?

DR. DAVID A. MYERS, Lawton, Okla.: A wholesome surgical fear and a good surgical conscience are two very essential things for a physician. Do not let your surgical fear extend to the point that you will not repair the cervix following childbirth, and do not let your conscience dig you for not doing so. The technic, when once tried, is very simple, and the results are so good that the procedure should occupy the same place as the immediate repair of the perineum.

### Cerebrospinal Meningitis

DR. WILMER L. ALLISON, Fort Worth, Tex.: The interesting features in my case were the protracted course after marked improvement following the use of serum; the violent reaction which followed the last four doses of serum, the internal hydrocephalus, the relief of which was followed immediately by marked improvement; the clear mentality throughout the case, and the increased growth of hair over the entire body.

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## MICHIGAN STATE MEDICAL SOCIETY

*Forty-Sixth Annual Meeting, held at Detroit, Sept. 27 and 28, 1911*

*(Concluded from page 1383)*

### The Diagnosis of Heart Disease

DR. G. W. MCCASKEY, Fort Wayne, Ind.: A complete anamnesis is important in studying a case of suspected heart disease. Inspection is too often cursory. Palpation is much neglected. Preliminary percussion may be made by holding stethoscope over area of superficial dulness and percussing lightly to edge of relative dulness. Findings may then be corroborated by ordinary percussion. The Roentgen ray is of immense value in determining the exact shape and size of the heart and the character of the cardiac movements. The orthodiagraph gives the most scientifically exact outline of the heart. Auscultation is very important, but has held too commanding a position. The significance of murmurs depends on their associated signs and symptoms. The rhythm and character of the sounds are more important *per se*. The study of the venous and radial pulse by synchronous tracings made with polygraph is most important, particularly in the study of arhythmias and heartblock. The electrocardiogram and the cardiophonograph are also of immense importance. The study of blood-pressure is absolutely essential though usually due to extra cardiac conditions. Respiratory embarrassment, hepatic engorgement, and dropsy are the time-honored signs of a failing heart. Hepatic engorgement should be sought for more constantly than it is. Fatal heart disease may occur without any of these signs being obtrusively present or even present at all.

### The Heart in the Acute Infections

DR. C. G. JENNINGS, Detroit: It is probable that acute degeneration of the myocardium results in every acute general infection attended by fever and other symptoms of toxemia. The extent of this degeneration will depend on the type, the virulence of the duration of the infection. Edema and cellular infiltration may precede, accompany or follow the onset of degeneration of the muscular fibers. In certain prolonged cases, chronic interstitial myocarditis is developed. Heart failure from acute myocardial degeneration and inflammation does not usually come in the early days of acute infection. Time must be given for the degenerative changes to weaken the heart. In diphtheria, however, possibly in pneumonia, myocardial changes advance with great rapidity and by the end of the first week may threaten life. In typhoid, influenza and other prolonged infections, the myocardium does not cause apprehension until the second or third week or later.

Circulatory failure in the first few days of an acute infection is usually due to vasomotor paralysis. In circulatory failure during the second week, vasomotor paralysis is still an important factor, although myocardial changes are usually present. The failing heart in the late stages of an acute infection is the result of myocarditis with or without dilatation. From the onset of the disease it should be the aim of the physician to limit toxemia by the early administration of specifics, as in diphtheria and rheumatism, the maintenance of free elimination, the intelligent use of hydrotherapy and careful attention to dietetics and the hygiene of the sick-room.

DISCUSSION OF PAPERS BY DRS. MCCASKEY AND JENNINGS

DR. A. W. HEWETT, Ann Arbor: The particular methods that have been introduced in diagnosis of heart disease, or one of the most important ones, is that of determining the blood-pressure. The form of irregularity in which the heart is extremely irregular has been shown to be due to auriculo-fibrillation, and the muscle is in a continuous state of fine fibrillation. Digitalis does not raise the blood-pressure in man to any appreciable extent, and this is a very important point, because it is very common for physicians to decline or hesitate to give digitalis to patients with high blood-pressure. If a patient has high blood-pressure, I hesitate to give it; but if he has a low blood-pressure, it is of practical importance, in most cases, to raise it by administering digitalis.

DR. G. W. MCCASKEY, Fort Wayne, Ind.: It has been assumed, on ordinary clinical grounds, that digitalis, in ordinary dosage, does not materially raise blood-pressure. I am unconvinced that the tendency of digitalis is not to raise blood-pressure. I have been unconvinced all the time, during recent years, and in those cases particularly where I am afraid of an increased peripheral resistance, I combine vascular dilators to counteract the vasoconstrictor effect which I assume to be present in the use of digitalis.

### Acute Anterior Poliomyelitis

DR. B. F. GREEN, Hillsdale: In Hillsdale County the epidemic of 1910 began in July and ceased in November, with a total of seventy-two cases, not including any of the abortive type. There were twelve fatal cases, four attributed to polio-encephalitis and eight to paralysis of the respiratory muscles. The spinal type occurred in fifty cases. The ages varied from 2 to 70. Nearly half the patients were under 10 years of age. In only four families were there second cases developing paralysis. In the fatal cases death occurred in the largest number within three days from the onset, though in one case it was delayed until the fourteenth day. So far this year Hillsdale County has had only one case, the patient at present being convalescent.

### The General Use of Fat in the Diet

DR. JAMES E. DAVIS, Detroit: Indoor life is provocative of an appetite which shows a decided preferment for carbohydrate and protein and a distaste for fat, the result being an unbalanced diet, causing too frequently carbohydrate indigestion and protein errors of metabolism. This indoor class

can metabolize fat better than protein, and the difficulties with the digestion of adequate quantities of fat should be met by skilful cooking, which will avoid subjecting it to prolonged high temperatures and will seek suitable combinations with a carbohydrate. Fat in the diet of natural selection is 8.3 per cent. of the total food weight, but it furnishes 16 per cent. of a day's total energy. No other food requires so careful an investigation of individual peculiarities in each patient as fat.

### The Relation of Premature Rupture of the Amniotic Sac to Puerperal Sepsis

DR. GEORGE KAMPERMAN, Ann Arbor: A study of 300 recent confinements shows that premature rupture occurred thirty-eight times or in 12 per cent. of all cases. In practically all of these thirty-eight cases the amniotic sac ruptured before the beginning of labor. The labors in these cases of premature rupture were not longer than the average. Among the 262 cases where the membranes ruptured normally, there was a slight rise in temperature in 1.4 per cent. and a severe sepsis in 0.4 per cent. But among the thirty-eight cases where membranes ruptured prematurely, there was a slight rise in temperature in 13 per cent. and severe sepsis in 8 per cent. In this series puerperal sepsis occurred about ten times as often after premature rupture as it did after normal rupture of the membranes. The increased frequency of infection is probably due to the open birth canal, vaginal examinations contaminating the amniotic cavity with the vulval bacteria. As a prophylactic it is suggested that in all cases of premature rupture, the vulva be cleaned and protected from contamination, and that examinations be made per rectum instead of per vaginam.

DISCUSSION

DR. EUGENE BOISE, Grand Rapids: I am glad that statistics have shown that primiparæ are much more likely to sepsis than the multiparæ, but the question is, why is it so? Is it not probable because the vaginal examinations are made more frequently in primiparæ than in multiparæ, and the membranes have ruptured prematurely. The question suggests itself, is it not possible that the rupture of the membranes and the discharge, and the manner in which the fluid is discharged has something to do with it? There is also more apt to be an injury to the cervix in these cases of premature rupture of the membranes.

DR. E. GEORG, Ann Arbor: Unless a sterile bath can be taken, every pregnant woman is liable to infection from the douches, especially if the membranes have ruptured. An important thing in the care of these patients is that they should use a bed-pan, particularly after the membranes have ruptured.

DR. C. E. BOYS, Kalamazoo: It would seem to take a very generous supply of rubber gloves and much boiling and frequently changed hand solutions in order to make rectal examination feasible. After all, one sometimes questions how much good these examinations do, anyway. Personally, I depend more and more on external examinations for diagnosis of position and presentation.

### External Pelvimetry with Special Reference to Method of Measuring the Outlet

DR. HOWARD H. CUMMINGS, Ann Arbor: Routine pelvimetry of the outlet has been sadly neglected. The best method of outlet pelvimetry is that taught by Professor Williams of Johns Hopkins. The diameters of the outlet of a normal pelvis should measure, according to Klein, who based his conclusions on the study of 113 normal pelves as follows: Transverse, 11 cm.; anterior sagittal, 6 cm.; posterior sagittal 9.5 cm.; anteroposterior, 11.5 cm. Williams measured 185 normal pelves and obtained as average outlet measurements the following: Transverse, 10.5 cm.; anterior sagital, 5 cm.; posterior sagittal, 7.5 cm.; anteroposterior, 11.5 cm. A series of seventy cases measured at the University of Michigan Maternity Ward gave the following average outlet measurements: Transverse, 10.2 cm.; anterior sagittal, 5.4 cm.; posterior sagital, 8.5 cm.; anteroposterior, 11.3 cm. Funnel pelvis was found in four cases in ninety consecutive obstetric patients.

### Coloptotic Constipation

DR. L. J. HIRSCHMAN, Detroit: All cases of coloptosis must have associated with them an atonic condition of the colonic musculature, as all coloptotic patients are not constipated neither have all constipated patients coloptosis. In many patients who are coloptotic, a compensatory muscular development of the colon overcomes the ptosis. The surgical treatment consists of mesenteric suspension of the ptotic bowel, rotation and anchoring of prolapsed cecum and lateral anastomoses of parallel dependent limbs of prolapsed transverse and descending colon. Hygienic, dietetic and physical therapeutic measures are advocated in conjunction and following the surgical procedures.

DISCUSSION

DR. P. M. HICKEY: From the fact that about every fifth individual is born with a ptosis, our treatment should begin very early. The schools should take up the matter of correct position. Pupils should not be allowed to go around with the shoulder blades prominent and shoulders bent forward and the abdomen totally limp, but they should be taught the military exercises, and setting-up drill to bring them up in shape and accentuate the development of the abdominal muscles, and then this condition would not be present in later life, and there would not be so many neurasthenics.

### Blood-Pressure in Eclampsia

DR. WALTER E. WELZ, Detroit: There is always an increase of intravascular pressure in pregnant women before the advent of eclampsia. The blood-pressure is highest during the convulsive state, and gradually drops to normal with recovery. All women passing through the later months of pregnancy may be placed in one of five groups: (1) normal, (2) eclamptic, (3) chronic nephritic, (4) non-toxic renal, (5) mechanical albuminuria. Blood-pressure readings and urinary analyses are the principal factors of this classification, which should lead to earlier diagnosis, efficient prophylaxis and more definite prognosis in cases of toxemia of late pregnancy. Abnormal urinary findings are of value only when qualified by blood-pressure readings. The blood-pressure alone is worth more as a diagnostic aid than any other symptom, and for this reason should be made use of as the indicator for the care of threatened eclampsia. If the high pressure of late pregnancy is controlled, the patient may pass through pregnancy, labor and puerperium without the advent of convulsions. Veratrum viride apparently helps control the convulsions by slightly lowering blood-pressure, which causes a subsidence of the serious condition in acute eclampsia.

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## *Current Medical Literature*

### AMERICAN

Titles marked with an asterisk (*) are abstracted below.

**American Journal of Medical Sciences, Philadelphia**

*October, CXLII, No. 4, pp. 470-624*

1 Specificity, Danger and Accuracy of Tuberculin Tests. L. Brown, Saranac Lake, N. Y.
2 *Is Pernicious Anemia of Infectious Origin? H. C. Moffitt, San Francisco.
3 *Coagulation Time of Blood in Various Diseases. R. D. Rudolf and C. E. C. Cole, Toronto.
4 Physiology and Pathology of Fever. A. I. Ringer, New York.
5 Treatment of Febrile Conditions. F. S. Meara, New York.
6 Cysts of Spleen. J. H. Musser, Philadelphia.
7 Case of Late Hodgkin's Disease (Lymphoma Granulomatosum), With Various Cases Presenting Clinical Picture of Splenic Anemia (Banti's Disease). F. P. Weber, London.
8 Insidious Onset of Pneumothorax. O. H. P. Pepper, Philadelphia.
9 *Sound Production and Sound Conduction Along Respiratory Tract. J. H. Barach, Pittsburg.
10 General Considerations as to Visceral Ptosis. A. L. Benedict, Buffalo.
11 Multiple Metastatic Abscesses of Heart and Lungs in Pyemia. R. N. Willson, Philadelphia.
12 Aortic Regurgitation. W. W. Kerr, San Francisco.
13 Recent Advances in Anatomy and Pathology of Heart from Clinical Point of View. A. E. Cohn, New York.

2. **Pernicious Anemia.**—Reasoning by analogy as well as on the basis of clinical observation, Moffitt appears to incline to the belief of an infectious origin of this disease.

3. **Coagulation Time of Blood in Various Diseases.**—Secondary anemias, other than those due directly to hemorrhage, appeared to have a normal clotting time. Twelve observations were made by Rudolf and Cole on six patients, with an average clotting time of 7.8 minutes, and a range of from 10.5 to 6.4 minutes. When the anemia resulted from hemorrhage, the clotting time was invariably shortened, except in the case of hemophilia, when hemorrhage appeared to have no such effect. In eight cases of hemorrhage, with fourteen observations, the average clotting time was 6.6 minutes, with a range of from 5.2 to 10 minutes. The one that showed a time of ten minutes was a case of epistaxis in an old woman. It was not severe, but was very persistent and hard to control. There was no history in the family of bleeding nor of previous hemorrhages. In one case of severe traumatic hemorrhage the clotting time was 6.4 minutes. The patient was transfused by Crile's direct method, and afterward the clotting time was practically the same (6.5 minutes). The donor, his brother, showed before the transfusion a clotting time of 8.5 minutes, and directly after, one of 5.8 minutes. Six healthy children were tested before and after the administration of a prophylactic dose of antitoxin. The dose given was always 500 units, which bulks about 3 c.c. There was no change produced in the clotting time.

Two cases of hemophilia, both typical as regards the family tendency to hemorrhage, etc., showed very different readings as regards their time of coagulation, one giving an average of 9.5 minutes and the other one of nineteen minutes. The one that showed the greater delay was given calcium lactate freely for two days, 30 grains every four hours, with a sequence of a clotting time of twenty minutes. A few days later he was given 15 c.c. of rabbit blood-serum subcutaneously without any perceptible effect on the clotting time. Six cases of jaundice showed an average clotting time of 9.6 minutes as a result of ten observations. In none of them had there been any recent hemorrhage. A case of splenomyelogenous leukemia, which remarkably improved as regards the blood-picture under the biweekly use of Roentgen rays showed some lengthening in clotting times as the leukocytes dropped in number. Forty-seven observations were made on seventeen cases of lobar pneumonia, and the average clotting time was 8.1 minutes, but ranged from 3.5 to 12.75 minutes. The clotting time did not vary with the acuteness of the infection, two fatal cases showing a time of 8.25 and 8.75, respectively, shortly before death. No marked daily variations occurred. Three cases of purpura, in which subcutaneous hemorrhages occurred without definite cause, showed an average coagulation time of 6.16 minutes from eight observations, the range being from 4.9 to 7 minutes.

Thirty-eight observations were made on the blood of fifteen patients with acute rheumatism, and the average clotting time was found to be 10.2 minutes, with a range of from 7 to 14.3 minutes. Thus, the clotting time in acute rheumatism seems to be lengthened. It was noted that the clotting was delayed as long as the acute pain lasted, but it did not seem to have any special relation to the degree of fever present. All of these patients were freely treated with salicylates, but the delay in the clotting time was not due to this medication, as in several of the cases the first estimates were made before the remedy was commenced, and in most of them the drug was still being given after the pains had ceased and the coagulation time had consequently become faster. Sixty observations were made on twenty-six cases of typhoid, and the average clotting time was found to be 7.1 minutes, with a range of from five to twelve minutes. The severity of the invasion did not seem to have any effect on the clotting time.

9. **Sound Production and Sound Conduction Along Respiratory Tract.**—Barach found that the "bronchial breathing" heard at the acromial end of the clavicle has its origin at the manubrium sterni, which receives sound vibrations from the trachea behind. The cavernous breathing heard over the cranial bones, particularly the occipital, has its source of origin in the nasal fossa which acts as a resonator. In the nasal fossa, the nasal resonator, a definite amount of sound is produced, and this sound added to the sound wave created along the lower portions of the respiratory tract, makes up the "sound total," which is heard when auscultating. That the nasal resonator is an active factor in auscultatory sound production is readily appreciated by observing the weakening of the respiratory sounds which occur when its action is eliminated. From this it is evident that auscultatory sound production does not begin at the larynx. This, too, shows that the examiner must take into careful consideration the condition of the nasal resonator, and whether the mouth is opened or closed, in the proper interpretation of his auscultatory findings. The observations on tracheotomy cases throw light on the part played by the larynx, which seems to be of less importance than is generally believed. They show that elimination of the larynx results in modification of the pitch and volume of the bronchial and vesicular sounds, but the essential characteristics of these sounds remain unchanged.

### Illinois Medical Journal, Springfield

*October, XX, No. 4, pp. 387-500*

14 *Cancer in Domestic Animals. M. Herzog, Chicago.
15 *Etiology of Cancer. F. R. Zeit, Chicago.
16 Surgical Treatment of Cancer. S. C. Stremmel, Macomb, Ill.
17 Diagnosis of Acute Poliomyelitis. L. H. Mettler, Chicago.
18 *Medical Service of State Hospitals. C. F. Read, Watertown, Ill.
19 Some Necessary Applications of Physiologic Psychology. D. B. McEachern, Chicago.
20 Mixed Infection in Pulmonary Tuberculosis. R. T. Pettit, Ottawa, Ill.
21 Attenuated Types of Suppurative Sphenoiditis in Relation to So-Called Post-Nasal Catarrh, to Headache with Mental Daze and to Asthma. W. E. Casselberry, Chicago.
22 Law and Medicine. C. H. Burton, Edwardsville, Ill.
23 Control of Bovine Tuberculosis. M. P. Ravenel, Madison, Wis.

14 and 15. Abstracted in THE JOURNAL, June 17, 1911, p. 1844.

18. Abstracted in THE JOURNAL, June 10, 1911, p. 1747.

### Kentucky Medical Journal, Bowling Green

*August 1, IX, No. 15, pp. 539-596*

24 *Surgical Complications of Typhoid. A. D. Willmoth, Louisville.
25 Case of Pellagra. F. Dunlap, Danville.
26 Business Side of Medicine from Idealistic and Optimistic Point of View. J. L. Atkinson, Campbellsville.
27 Endometritis. H. T. Crouch, Bardwell.
28 Appendicitis. L. C. Shafer, Florence.
29 Pelvic Cellulitis or Parametritis. G. W. Payne, Bardwell, Ky.
30 Milk: Its Relation to Public Health. F. J. Eisenman.
31 Cerebral Arteriosclerosis. E. Harthill, Pewee Valley.
32 Careless Examination; Thereby Causing Faulty Diagnosis. B. P. Earle, Dawson.
33 Prognosis and Treatment of Typhoid. C. R. Garr, Flemingsburg.
34 Diarrhea of Children. C. R. Morton, Dawson Springs.
35 Postpartum Hemorrhage. H. C. Clark, Falmouth.

*August 15, IX, No. 16, pp. 607-730*

36 *Observations on Sepsis and Antisepsis in Medicine. W. S. Thayer, Baltimore, Md.
37 *Rubber Gloves in Obstetric Practice. W. B. Gossett, Louisville.
38 Circumcision and Uncircumcision. R. B. Gilbert, Louisville.

24. Abstracted in THE JOURNAL, Oct. 8, 1910, p. 1308.

36. **Sepsis and Antisepsis in Medicine.**—It is urged by Thayer as an antiseptic prophylactic measure that there should be special typhoid wards, special tuberculosis wards and special isolating wards in which diseases such as bacterial dysentery may be cared for. Precautions such as those now supposed to be taken in connection with typhoid should be taken in the care of patients with diseases such as pneumonia or influenza. Orderlies and nurses with bad colds or tonsillitis should not be allowed to attend regularly to susceptible individuals or to those in whom the contraction of the malady might produce grave results, such, for instance, as patients suffering with mitral disease. Every hospital ward should be thoroughly and effectively netted against flies and mosquitoes. The omission of a precaution so elementary in its necessity as this, should be regarded as criminal negligence. Not only nurses and orderlies, but attending physicians, should wear clean uniforms or gowns, whenever attending wards containing contagious diseases and remove them on leaving the wards. And among contagious diseases, Thayer includes such maladies as typhoid, tuberculosis and

dysentery. All attendants should invariably and thoroughly wash their hands on leaving a ward or a bed containing a patient suffering from an acute infectious disease. The observance of the necessary precautions of sterilization of the clothes, eating utensils, excreta and bath water of all patients with infectious diseases, should be as rigidly and thoroughly enforced as are the antisepsis rules in the surgical operating room. Cultures should be taken from the urine and feces of all typhoid patients before their discharge from the hospital and, as a rule, no patient should be discharged until his excreta are free from the infectious organism. Similar steps should be taken with regard to dysentery.

Thayer is convinced that if precautions such as these were uniformly adopted in large hospitals, a great step would be taken, not only toward the immediate protection of the population of that institution and of the surrounding community, but toward the education of the medical and lay public at large, for similar precautions should also be taken in connection with patients whom physicians are attending at their homes. In the case of typhoid, for instance, the house should be thoroughly netted. No flies from that patient should infect the food of his neighbors. Furthermore, when possible no one but the attendants should be allowed in the room of the patient. If, however, it is necessary for one member of the family to be present, that individual should adopt all the precautions observed by physician and attendants. The physician should wear a fresh, clean gown whenever he visits the patient. A sufficient supply of these garments should be kept, so that a fresh one may be worn at every visit. The gown should be placed immediately in a tin boiler and boiled after every visit of the physician, so that in most cases, one or two gowns would suffice. The rules for the sterilization of the bath water, excreta, clothes and eating utensils should be carried out in the same manner as in the hospital. Final cultures should be made in the same way. He says that physicians as a body have been content to limit their practice to the treatment of infections after they have occurred, while the surgeon has long since passed beyond this, and has recognized that his most important duty lies in prophylaxis against this infection.

37. **Rubber Gloves in Obstetric Practice.**—Gossett is of the opinion that it is unnecessary for the obstetrician, under normal conditions, to make a habit of using rubber gloves in every case, if he takes the same precautions in cleansing his hands as the surgeon does before performing a major operation. The man who uses gloves must remember that their employment in no way lessens the necessity for thorough cleansing of the hands beforehand. The same precautions must be taken with the hands as if the gloves were not to be used. And just here, Gossett says, will be a great danger because a great many physicians will think that with the use of gloves this precaution is not necessary.

### New Mexico Medical Journal, Las Cruces

*September, VI, No. 12, pp. 291-330*

39 The Needs of New Mexico. F. T. B. Fest, Las Vegas, N. M.
40 Anesthesia. W. W. Spargo, Albuquerque, N. M.
41 Inalienable Birthright of Physician. C. M. Yater, Roswell.

### Annals of Surgery, Philadelphia

*October, LIV, No. 4, pp. 433-576*

42 Study of Infections. A. T. Bristow, Brooklyn, N. Y.
43 Anatomy of Spinal Puncture with Technic and Paralytic Sequels. W. C. Lusk, New York.
44 *Technic of End-to-End Arterial Anastomosis. A. Ehrenfried and W. M. Boothby, Boston.
45 *Lateral Vascular Anastomosis. B. M. Bernheim and H. B. Stone, Baltimore.
46 Some Recent Mechanical Aids to Hollow Visceral Anastomosis. C. E. Tennant, Denver, Colo.
47 Successful Ligation of First Portion of Left Subclavian Artery. J. M. Neff, Spokane, Wash.
48 Fibro-Epithelial Tumors of Mammary Gland. R. B. Greenough and C. C. Simmons, Boston.
49 Intercostal Diaphragmatic Hernia: Report of Case. J. C. A. Gerster, New York.
50 Experimental Study of Management of Post-Operative Thoracic Infections. N. W. Green and H. H. Janeway, New York.
51 Surgical Clinic of Protestant Episcopal Hospital of Philadelphia. C. H. Frazier, Philadelphia.

44. **End-to-End Arterial Anastomosis.**—The authors report a successful case of suture of the femoral artery which had been completely severed, though the ends were held together beneath by some strands of uncut adventitia. The surrounding tissues were infiltrated with blood-clot. The vein and nerve were intact. Crile clamps were applied to the artery, the adventitia trimmed away and the ends sewed together by Carrel's method. The clamps were taken off, and then the clamp on the iliac artery was removed. There was some oozing of blood from the anastomosis, which ceased in two minutes under light pressure. Pulsation was readily felt beyond the suture. The abdominal wound was sewed up in layers, the thigh wound by mass sutures. Sterile dressing was applied, stimulation, heaters and blankets. The recovery was rapid and uneventful, despite the weakness of the patient from loss of blood. When seen the next day the left foot was warm and on the day following pulsation of the dorsalis pedis could be readily made out and heaters and blankets were discontinued. The temperature and pulse were normal on the fourth day and remained so. The stitches were removed after the tenth day and on the fourteenth day the patient went home, well except for a small granulating area at the site of the original wound.

45. **Lateral Vascular Anastomosis.**—In the method devised and employed by the authors the artery and vein between which the communication is to be established are carefully dissected out and bull-dog or Crile clamps, rubber-shod, are applied to each vessel at corresponding points. The incision in the artery is made first. A sharp cataract knife, held transverse to the long axis of the vessel, is plunged through the artery in a direction oblique to the horizontal plane in which the vessel lies, so as to form a sector of the lumen with its arc equal to about one-third of the circumference. The knife is thrust in with its cutting edge upward and toward the adjacent vein. The overlying one-third of the artery wall is then divided. At once the retraction of the longitudinal muscle and elastic fibers causes this transverse incision to gape and become an open ovoid. Owing to the fact that the knife was entered obliquely and not perpendicularly, this ovoid looks toward the vein and also somewhat upward. The posterior edge of the opening is thus easily accessible for suturing. As soon as the artery is opened all blood is washed out with salt solution, the adventitia stripped off carefully and the lumen and other surfaces freely bathed with liquid vaselin. The artery is then protected with vaselin-soaked gauze and a similar incision, corresponding in size and position, is made in the vein so that it looks toward the artery and upward. The suture is started by passing the needle through the wall of the artery from without inward, then crossing to the vein and passing here from within outward. When this suture is tied the knot lies outside the vascular lumen. From this starting point a simple continuous suture is carried around the openings in the two vessels, care being taken to avoid purse-stringing. The operation is completed by tying the last suture to the remaining long end of the first tie. No difficulty is experienced in approximating the edges of the incisions and there is no more tension on the thread than in an end-to-end anastomosis.

After completion of the suture, the clamps are removed first from the vein, as in all vascular surgery. If any marked leakage occurs, the weak spots are reinforced by one or two extra sutures. Then the arterial flow is gradually allowed to go over. During the suturing, intima is not always approximated to intima, but with the establishment of the arterial stream through the anastomosis, the "pull" in opposite directions between the two vessels helps to bring about an accurate approximation. This method has been employed with great satisfaction a considerable number of times in animals and was equally simple in execution in the one clinical case in which they have so far had the opportunity to try it. After an interval now of three months, this patient's anastomosis is working splendidly.

### Vermont Medical Monthly, Burlington

*September 15, XVII, No. 9, pp. 209-234*

52 Epidemic Poliomyelitis in Light of Recent Laboratory Researches. G. R. Pisek, New York.
53 An Operation (Mayo) for Hysterectomy. S. E. Maynard, Burlington, Vt.

54 Anterior Poliomyelitis. F. E. Steele, Waterbury, Vt.
55 Single Rod Axis Traction Forceps. G. L. T. Hayes, Graniteville, Vt.

### Journal of American Public Health Association, Columbus

*September, I, No. 9, pp. 601-676*

56 *How to Get and Keep Competent Health Officers. G. W. Goler, Rochester, N. Y.
57 Some of the Larger Aspects of the Work of the Metropolitan Sewerage Commission of New York. G. Soper, New York.
58 Ventilation of Emigrant Ships. P. H. Bryce, Ottawa, Canada.
59 Chemical Disinfection of Water and Sewage; Recent Development and Present Status. E. B. Phelps, New York.
60 Bacteriologic Examinations of Shucked and Shell Oysters. G. W. Stiles, Washington, D. C.
61 Source, Manufacture and Composition of Commercial Agar Agar. H. A. Whittaker.
62 Some Results Obtained from Digestion of Suspected Tubercular Sputum. B. R. Rickards, Urbana, Ill., and L. V. Parker, Minot, N. D.
63 Use of Streptococcus Vaccine as Means of Prophylaxis Against Scarlet Fever. E. T. Biwer, Chicago.
64 Score Card System of Dairy Inspection from National Standpoint. G. M. Whitaker, Washington, D. C.
65 Sterilizing Stations in Dairy Districts. C. E. North, New York.
66 Pasteurization of Milk in Sealed and Final Package. J. C. Carter, Boston.

56. **How to Get and Keep Competent Health Officers.**—The practice of modern sanitation and hygiene, having for its object the prevention of disease and the prolongation of life, Goler says, does not lead to increased compensation for the health officer, but, cut off from that increase in private practice which devotion to public duty in America always brings, he lands at the end of his career, out of work, out of money and out of health. To the city of his service he has usually given the best that is in him and his labor has been of inestimable value to the life and health of the people of the community; but more than that, if well done, it has been of economic value by lessening the burden which the city has had to bear in caring for the sick, supporting the widowed, the orphaned and the fatherless, in hospitals and other institutions, through private and public charities. Even more than this, the economic value of his work serves to attract attention to the city as a city of the well; and the advantages of a city where health is high and deaths relatively infrequent will be in the time to come, if not now, more than the advertising advantages of bill boards and newspapers. Our cities, says Goler, are beginning to learn the lesson that our insurance companies are learning and just as the insurance men have realized that it is better by care to keep their policy holders alive to pay premiums, than it is to let them die and have the companies pay death claims, so our cities are learning that to grow in population and in importance it is not only necessary to attract new citizens, but it is necessary to take care of the health and lives of those they have.

To do all this, and much more, is the work of the new health officer. To do his work well, he will not only have to exercise all the knowledge he has, but he will have constantly to accumulate new knowledge by frequently attending meetings and conventions of sanitary and social workers. He will also have to do a large amount of research work, both directly and through the labor of those in the laboratory. The equipment of the modern health office, the employment of laboratory workers and the purchase of apparatus, all cost money and in the beginning it may be difficult to get all the money necessary to man and equip the various divisions of the department where advanced work should be going on for the solution and interpretation of questions relating to the public health. For the study of cognate subjects, public spirited citizens equip and endow departments in various institutions and surely no one could place even small sums of money to any better purpose, than for the endowment of special or general work in public health laboratories. Under such conditions, the opportunity to work with a reasonable tenure of office and a fair compensation, the new health officer would become the chief advertiser of the city's health, its wealth and its progress.

### Medical Fortnightly, St. Louis

*September 25, XXXX, No. 6, pp. 385-408*

67 Conservation of Our Young People. D. Lewis, Chicago.
68 In the Twilight. C. E. Warren, North Easton, Mass.
69 Modern Management of Pneumonia. S. Baruch, New York.

*October 10, XXXX, No. 7, pp. 409-430*

70 Contribution to Medical History of Napoleon's Campaign in Russia in 1812. A. Rose, St. Louis.
71 In the Twilight. C. E. Warren, North Easton, Mass.
72 Modern Management of Pneumonia. S. Baruch, New York.

### Buffalo Medical Journal

*October, LXVII, No. 4, pp. 121-178*

73 Treatment of Acute Gonorrhea. C. W. Bethune, Buffalo.
74 Labor in Moderately Contracted Pelves. F. C. Goldsborough, Buffalo.
75 *Case of Laceration of Trachea. W. L. Wallace and H. O. Brust, Syracuse, N. Y.

75. **Laceration of Trachea.**—While performing athletic stunts this patient fell from a bar, striking the front of his neck across the back of a chair. He was at once in great distress for breath and coughed up much blood. For six days and six nights he was unable to lie down and if he dropped off to sleep for a second, his breath would be instantly shut off. He also had great difficulty in swallowing any food or water. At the operation it was found that three or four of the rings were badly broken from about the third to the fifth or sixth. The proximal and distal ends of the broken trachea were entirely separated and out of line and were held together only by the fibrous membrane which connects the posterior extremities of the cartilaginous hoops. The authors cut away the protruding splinters of the rings and sewed up the tracheal wound with fine chromic catgut. Most of the stitches were passed through the entire wall of the trachea, fastening and holding the broken rings to the sound rings above and below. As the mucous membrane tended to peel away from the rings and plug the breathing space and as the broken rings tended to collapse, they found these through-and-through stitches necessary. After getting the trachial tube air-tight by stitching a piece of fascia over the repair, they were met with another difficulty. When they took off the tenacula, used to hold the ends of the trachea in line and together, the windpipe collapsed, lacking the supporting cartilage hoops. When they pulled forward again, he could breathe. They therefore passed two or three traction linen sutures into the front of the trachea and brought them forward out of the wound, keeping up the tension while the superficial wound was closed and fastened them around the dressing covering the wound. A small rubber drainage tube was left at the lower extremity to take care of the infiltrated tissues. The drainage tube was gradually withdrawn during the next four or five days and at the end of a week the traction stitches were found to be no longer needed. They were therefore removed and the wound allowed to close and he has had no further trouble. One month later, his breathing and speaking were normal.

### Journal of South Carolina Medical Association, Charleston

*September, VII, No. 9, pp. 329-358*

76 Medical Inspection of Schools in Spartanburg, S. C. L. R. N. Gantt, Spartanburg, S. C.
77 Medical Inspection of Schools and School Children. J. F. Townsend, Charleston, S. C.
78 Medical Inspection in Winthrop College Training School. L. Boyd, Rock Hill, S. C.
79 Uncinariasis: Its Eradication in South Carolina. J. L. Ward, Columbia.

### Journal of Nervous and Mental Diseases, Lancaster

*September, 38, No. 9, pp. 513-576*

80 *Early Symptoms of General Paralysis. P. C. Knapp, Boston.
81 *Pathologic Study of Türck's Bundle. J. H. W. Rhein, Philadelphia.
82* Muscular Hypertrophy with Weakness. A. H. Woods, Philadelphia.

80 and 81. Abstracted in THE JOURNAL, July 29, 1911, pp. 417 and 418.

82. **Muscular Hypertrophy With Weakness.**—Woods calls attention to a disease of the muscular system the characteristics of which are as follows: Increased bulk of affected muscles, which feel firm when contracted; diminished power with early fatigue; hypertrophy of individual fibers, some increase in number of nuclei; no proliferation of fibrous or fatty tissue and no degeneration; tendon-reflexes, mechanical irritability and electrical reactions varied from slight diminution to slight increase. No qualitative electrical changes; a few cases show vasomotor skin changes; and some, dull pain

or tenderness of muscles; the course is slow, but little change occurring from year to year; males are more often affected. The upper extremities were involved more than the lower, though any part of the body may suffer.

### American Journal of Obstetrics and Diseases of Women and Children, New York

*October, LXIV, No. 406, pp. 593-728*

83 The "Pelvic" Kidney; Report of Two New Cases. D. Bissell, New York.
84 *Posture of Lying-In Patient. G. C. Mosher, Kansas City, Mo.
85 Comparative Anatomy of Female Genitalia. E. A. Schumann, Philadelphia.
86 Surgical Hints. T. F. Lowe, Washington, D. C.

**84. Posture of Lying-In Patient.**—Mosher's rule is that the woman should be on her feet when she can have a record of two days in which no red color is shown. This puts the average patient up about the fifteenth day. She walks to a chair, is up an hour, increases the limit daily, as she shows her recuperation, judging by the lochia and height of fundus. Mosher examines her the fourth week and cautions her to lie down part of each day through the sixth week. He has had the fundus at the brim by the ninth day and the lochia serosa at the same time and he has had the patient in bed eighteen and twenty days. Usually she may be up half the day the third week and out the fourth week, but Mosher finds a routine practice during the first ten days of raising the head of the bed 8 or 10 inches an advantage in assisting drainage without subjecting the patient to any effort or exertion as is done when on the back rest. Mosher says that American women of the better class are not to be compared in their physical strength with the German peasantry, so that conclusions drawn from hospital statistics of the latter class cannot serve as a criterion for us in putting the patient on her feet. On the other hand, the modern young mother of the present generation who has had an education and an opportunity to live the normal life under direction of her advisor will be found to come through her ordeal in better shape by the adoption of the conservative rule than if she followed the heroic teachings of our brothers across the sea.

As to the change of posture in bed, Mosher's own experience has led him to allow the patient to be turned on her side after the first few hours, this gives her a sense of comfort after the long enforced cramped position on her back with her knees flexed, as she was during labor. He has never been unfortunate enough to see a case of embolism following labor, but appreciates that one is never too old to learn. The catheter is a last resort. The patient is urged to use the pan while lying on her back with various devices of pitcher, douche, water poured from height into a vessel or from a faucet to aid by suggestion the emptying of the bladder. If these expedients fail, she may be turned gently over on her face, lying across the pan to aid by gravity the expulsive effort. Then as a last resort, rather than to catheterize, she is, if the pulse is 90 or under, allowed to be helped out to the jar, which, giving her the upright posture usually accomplishes the desired result. The rule to be laid down from the present state of knowledge, is that the involution of the uterus, the color of the lochia and general condition of the individual patient must govern the conduct of the case, rather than an arbitrary time limit, based on the number of days following delivery.

### Virginia Medical Semi-Monthly, Richmond

*September 22, 16, No. 12, pp. 289-312*

87 Prolapse of Uterus. C. R. Robins, Richmond, Va.
88 Symptoms of Exophthalmic Goiter. G. B. Lawson, Roanoke, Va.
89 Pathology and Chemistry of Exophthalmic Goiter. R. L. Rhodes, Roanoke, Va.
90 Treatment of Exophthalmic Goiter. H. H. Trout, Roanoke, Va.
91 Training of Nurses. C. S. White, Washington, D. C.

### Journal of Pharmacology and Experimental Therapeutics, Baltimore

*September, III, No. 1, pp. 1-99*

92 *Effects of Pilocarpin and Atropin on Amylolytic Power and Composition of Saliva. E. M. Ewing, Columbia, Mo.
93 *Actions of Caffein on Mammalian Circulation. T. Sollmann and J. D. Pilcher, Cleveland.
94 Consideration of Some Biologic Tests for Epinephrin. R. G. Hoskins, Columbus, O.

**92. Effects of Pilocarpin and Atropin.**—Ewing found that the volume of the normal saliva, its amylolytic power and the amount and percentage composition of solids secreted, remain approximately constant during a continuous period of secretion of six or eight fifteen-minute periods. If there is any change, it is a very slight falling off of the percentage composition of organic solids and at times of the amylolytic power. Pilocarpin reduces the relative amylolytic power of the normal saliva from 30 to 60 per cent. Although the relative amylolytic power of the saliva is much diminished by pilocarpin, the amount of maltose produced in the total volume of saliva secreted in a given period, after the administration of this drug, is greater than that produced by the amount of normal saliva secreted in the same length of time. "The efficiency" of the secretion is therefore increased by pilocarpin. Pilocarpin increases the amount and tends to increase the percentage of both the organic and inorganic solids of the saliva; the greatest increase is in the organic constituents, however. Any percentage increase of the solids is not nearly so great as the increase in the actual amount secreted. Atropin diminishes the amylolytic power of the saliva from 15 to 30 per cent. Both the amount and percentage composition of total solids secreted are greatly diminished by atropin. The decrease is in the organic constituents. Pilocarpin and atropin affect the factors which influence both the "trophic" and "secretory" elements of the saliva. The effect of pilocarpin and atropin on the secretion, or activity of the ptyalin of the saliva, bears no definite relation to the action of these drugs on the other physicochemical properties of the secretion.

**93. Action of Caffein on Mammalian Circulation.**—The effect of caffein on the circulation is shown by Sollmann and Pilcher to involve the following factors: Cardiac stimulation or depression, according to the dose and rapidity of injection; increased heart-rate, not due to vagus-depression (if the vagus is intact, there may be slowing through central stimulation, but with large doses, the heart escapes from the vagus tone); vasodilation, through peripheral depression of the vasoconstrictor mechanism; central vasoconstrictor stimulation generally ineffectual, also convulsive stimulation; cardiac irregularities, with large doses. The early intravenous injections show the following phenomena: Momentary myocardial depression, succeeded by myocardial stimulation; peripheral vasodilation; central vasomotor stimulation, usually ineffective; increased heart-rate. Blood-pressure: primary fall, followed by recovery and often a small rise. Oncometer: primary fall, followed by larger rise, usually outlasting that of the blood-pressure. Summation of effects with cumulative doses: (a) Total dosage of 20 to 150 mg. per kilo shows: cardiac depression (dilatation); peripheral vasomotor paralysis; moderate and ineffective central vasomotor stimulation; heart-rate reaches maximum and becomes irregular; blood-pressure falls to constant level of 50 to 70 mm.; fall of oncometer. (b) The blood-pressure reaches a constant level when the dosage reaches about 150 mg. per kilo, and further doses of caffein may then be injected with little effect, but sudden cardiac failure may supervene at any time.

### Journal of Maine Medical Association, Portland

*August, 2, No. 1, pp. 341-379*

95 *Modern Methods of Clinical Investigation in Relation to Hospital Organization. H. A. Christian, Boston.
96 Prostatic Concretions and Calculi. F. B. Lund, Boston.
97 Borderland of Medicine and Surgery. H. F. Hewes, Boston.
98 Chronic Alcoholism. F. E. Leslie, Andover.
99 A Brief History of Medicine. M. P. Judkins, Rockland.
100 Pregnancy Complicated by Eclampsia and Fibroid of Uterus. F. H. Jackson, Houlton.

**95. Hospital Organization.**—The very complexity of method used in modern medical investigation, Christian says, demands a highly specialized training and continuity of observation for investigators and in addition a large variety of apparatus and trained assistants if advance is to be made. The time element enters to make impossible the application of such methods to more than a relatively few patients at any one period. Consequently the trend of modern clinical investigation is more and more toward the most minute continuous study of a few patients rather than the cursory observation

of the many. Team work and cooperative coordinated observation become increasingly important and hence the necessity of a centralized staff organization. As a result of the influence of present methods of clinical investigation there has come the feeling that for the hospital in which medical investigation is to be conducted, a continuous service with a single head is a more advantageous unit of organization than the older method of broken service with three or four chiefs of coordinate rank on duty during the twelve months. If we examine critically the hospitals of the world with reference to their productivity in investigation, it seems quite certain that productivity is most marked in those that have used the continuous service plan.

How does such a continuous service affect the other functions of a hospital? Is there better teaching with a continuous than with a broken service? Can better men be attracted to the one than to the other? The teaching function of a hospital is, in large part, at least, utilized in connection with a medical school, and staff selections should be made in cooperation with medical schools, thereby securing better men for the work. The continuous service in connection with a teaching position in a medical school is considered more desirable than the broken service, inasmuch as it singles out one man as director and leader and concentrates in him the emoluments of the position. Abler men will naturally seek such a place and selection need not remain local, as was the case with the broken service. The ability to pick the best man wherever he may be is certainly desirable from the pedagogical view point. In fact, it is almost alone in the clinical branches of medicine that the limitations of local selections are tolerated in the choosing of teachers. If in all other branches of educational work the best teachers can be secured by a non-local competition, why not in clinical medicine, surgery, etc.?

### Lancet-Clinic, Cincinnati

*September 30, CVI, No. 14, pp. 329-354*

101 Acute Indigestion. C. C. Fibe, Cincinnati.
102 Bronchoscopy. J. W. Murphy, Cincinnati.
103 Shop Sanitation as Factor in Workman's Efficiency. O. P. Geier, Cincinnati.

*October 7, CVI, No. 15, pp. 355-380*

104 Psychic Causes of Insanity. I. O. Allen, Richmond, Ind.
105 Paralysis of Arm Removed by Suggestion, Although Accompanied by Cerebral Neoplasm. T. A. Williams, Washington, D. C.
106 Ancient Cincinnati House Physicians. T. C. Minor, Cincinnati.

### Journal of Cutaneous Diseases, New York

*October, XXIX, No. 10, pp. 521-568*

107 *Skin Changes in Leukemias and Allied Conditions. H. H. Hazen, Washington, D. C.
108 *Treatment of Malignant Syphilis. H. Morrow, San Francisco.

107. **Skin Changes in Leukemias.**—Observation of three cases and study of case reports in the literature has convinced Hazen that there is a group of cutaneous lymphomata and lymphosarcomata, which includes leukemia and pseudoleukemia cutis, lymphosarcomatosis cutis, lymphodermia perniciosa, mycosis fungoides and the cutaneous lesions of chloroma and myeloma which are closely related. The "serum reaction" recently discovered for mycosis fungoides by Joltrain and Brin and described by de Beurmann and Verdun may prove of service in elucidating the relationship. Lymphodermia perniciosa is a condition closely related to both leukemia cutis and to myocosis fungoides. Mycosis fungoides is an aleukemic lymphomatosis and may become leukemia. The cutaneous lesions of leukemia are probably infiltrations and are comparable with the internal nodules in splenomyelogenous leukemia.

108. **Treatment of Malignant Syphilis.**—Judging from the action of salvarsan on a number of malignant cases of syphilis and on fifty-five milder luetic infections Morrow is of the opinion that salvarsan controls malignant lues quicker and better than mercury. Severe infections seem to clear up as quickly as milder ones. In nasopharyngeal necrosis, the action is quick and sure. If given early in lues, alone or in conjunction with mercury, cases of malignant lues will be a clinical rarity.

### Journal of Kansas Medical Society, Kansas City

*October, XI, No. 10, pp. 403-450*

109 Traumatic Neuroses. O. D. Walker, Salina.
110 Hypothermia. H. L. Chambers, Lawrence.
111 Septic Endometritis; Report of Case. H. H. Brookhart, Scammon.
112 Medical Jurisprudence. J. H. Connaughton, Kingman.

### Albany Medical Annals

*October, XXXII, No. 10, pp. 575-636*

113 Diagnosis of Kidney and Ureteral Calculi. D. N. Eisendrath, Chicago.
114 *Occlusion of Posterior-Inferior Cerebellar Artery, a Definite Symptom-Complex. H. C. Gordinier, Troy, N. Y.
115 Exostosis of Os Calcis. J. M. Berry, Albany, N. Y.

114. **Occlusion of Posterior-Inferior Cerebellar Artery.**—Three cases of this very unusual condition are reported by Gordinier. He believes that the branches of the posterior-inferior cerebellar artery which supply the medulla oblongata are physiologic end-arteries and that occlusion of this artery occasions a perfectly definite symptom-complex. The area of softening resultant from occlusion of this artery is strictly limited to the lateral field of the formatio reticularis and restiform body. The salient clinical symptoms of this complex are easily explainable by the loss of functioning of the important tracts of fibers and cranial nerve nuclei contained in the softened area. No motor paralysis is present unless the thrombus extends into the vertebral or basilar arteries. This complex is equally as characteristic as that of the so-called Brown-Séquard's spinal paralysis. The symptoms occasioned by the occlusion of the right posterior-inferior cerebellar artery are exemplified by the three cases narrated. They may be briefly summarized as follows: Sudden onset without disturbance of or loss of consciousness; remarkable and long persistent vertigo with nausea and vomiting; deafness on the right side; absolute inability to swallow due to paralysis of the muscles of deglutition of the right side; voice low and hoarse. Staggering toward the right side, often striking objects on that side, the gait resembling closely that due to cerebellar disease. Complete analgesia and thermic anesthesia of the left side of the arm, trunk and leg and in two of the cases partially so of the left side of the face; absolute preservation of the tactile sense on whole right side; diminution or loss of pain and temperature sense in distribution of the right trigeminal nerve (observed only in case three). Impairment of sense of pain and temperature in pharynx while sense of touch was normal. Contracted pupil, ptosis, narrowing of the palpebral fissure, retraction of eye-ball on right side, loss of sweating on the right side of face and neck. Motor power normal and no permanent paralysis in the domain of the right facial and hypoglossal nerves unless thrombus extends into vertebral. In one case a temporary right-sided facial paralysis existed. Pulse slow in all three cases, probably due to vagus irritation; may be rapid from vagus paralysis. Th ereflexes were not characteristic. Gordinier believes these symptoms are doubtless due to implication (by the area of softening) and consequent loss of functioning of the following important conducting paths. Cranial nerve nuclei and their root fibers; the ventrolateral ascending tract of Gowers; the direct cerebellar tract of Flechsig; the descending vestibular tract and cochlear nerve roots. Dorsal and ventral auditory nuclei. The cerebello-olivary tract; the nucleus ambiguus or combined motor nucleus of the glossopharyngeal and pneumogastric nerves, vasomotor and sympathetic fibers.

### Journal of Abnormal Psychology, Boston

*October-November, VI, No. 4, pp. 249-328*

116 Plea for Study of Philosophic Methods in Preparation for Psychoanalytic Work. J. J. Putnam, Boston.
117 Case Illustrating So-Called Demon Possession. E. E. Mayer, Pittsburgh.
118 Freud's Theory of Wit. A. A. Brill, New York.

### Interstate Medical Journal, St. Louis

*October, XVIII, No. 10, pp. 983-1072*

119 *Rôle of Myocardium in Heart Disease. L. M. Warfield, Milwaukee.
120 Prolonged Pregnancy. A. H. Wright, Toronto.
121 Appendix Dyspepsia. W. F. Cheney, San Francisco.
122 High Frequency Cauterization of Bladder Lesions. E. L. Keyes, New York.
123 Methods of Dealing with Sac in Operations for Radical Cure of Inguinal and Femoral Hernia. H. M. Young, St. Louis.
124 External Malleolar Sign. C. G. Chaddock, St. Louis.
125 Ten Cases of Trauma Capitis. A. H. Deppe, St. Louis.

119. **Myocardium in Heart Disease.**—In Warfield's opinion the myocardium plays the chief rôle in disease of the heart. Valvular lesions mean that the heart is working at a disadvantage, its reserve power is not as great, but it does not necessarily mean a weak heart. It means that every case of heart disease, that is, valvular heart disease must be studied carefully as a distinct entity and not as one of a group of cases having similar lesions. It is just here, says Warfield, that there is the important difference between the really good physician and the average doctor. Habits of life, such as eating, sleeping, mental work and worry, defecation, sexual excesses, drinking, and, in short, everything pertaining to the life of the patient, must be most carefully and painstakingly inquired into before we can even begin to tell him what not to do. No detail is too unimportant for study. When we have grasped the fact that there are no unessentials in the history of a person with suspected heart failure, and the fact that a loud murmur does not necessarily mean real heart disease, and the other important fact that the state of the myocardium controls the situation, then we may have hopes of assisting many apparently hopeless invalids to useful lives.

## Medical Record, New York

*October 14, 80, No. 16, pp. 759-808*

126 Practical Application of Bacterial Vaccines. M. J. Synnott, Montclair, N. J.
127 Movable Cecum and Typhlotomy. O. Lerch, New Orleans.
128 Quinin and Urea Hydrochlorid: Its Preparation and Use as Local Anesthetic; Report of Ten Cases. W. A. Boyd, Westport, Conn.
129 Psychic Indigestion. G. M. Niles, Atlanta, Ga.
130 Can Inebriates be Cured by Physical Means in Hospitals? T. D. Crothers, Hartford, Conn.
131 Foreign Bodies in Lung Simulating Pleural Effusion. J. W. Boyce, Pittsburg.
132 Normal Pregnancy Following Two Ectopics. F. R. McCreery, New York.

## Boston Medical and Surgical Journal

*October 12, CLXV, No. 15, pp. 545-586*

133 *Simple Diet Card and Its Use. F. W. White, Boston.
134 *Phenolsulphonephthalin as Test of Renal Function. H. Cabot and E. L. Young, Boston.
135 Bacteriologic Examination of Stools as Measure of Quarantine Protection Against Asiatic Cholera. A. J. McLaughlin, Washington, D. C.
136 Effect Produced by Some Therapeutic Measures on Different Forms of Leukocytes in Pulmonary Tuberculosis. M. Solis-Cohen and A. Strickler, Philadelphia.
137 Case of Cerebral Syphilis in Child Four and One-Half Years Old Cured by Salvarsan. A. W. Fairbanks, Boston.

133. **Simple Diet Card.**—The importance of the amount of food as well as kind is emphasized by White. He says that the principles of nutrition are better known than the way to apply them. Our use of foods has been much less accurate than our use of drugs, and dietary mistakes have been common through ignorance of food values or difficulty in estimating them. A large part of the difficulty for the busy doctor has been the amount of work needed to estimate the fuel value of a day's food or the amount of carbohydrate, protein or fat in it. The method of doing this must be simple to be freely used.

He presents a simple diet card used by him. Its object is to avoid weighing of food and tedious calculations by giving food values in household measures. By its use one can readily plan or estimate the value of any simple diet or control the amount of some one food material, such as the carbohydrate in diabetes or the proteid in nephritis. The table gives the following:

1 glass of milk equals 160 calories.
1 glass of ¾ milk and ¼ (4 tablespoons) 20 per cent. cream equals 240 calories.
An eggnog (1 glass milk, 1 egg, 2 teaspoons sugar) equals approximately 300 calories.
A plate of cream soup equals 160 calories.
A glass of skimmed milk or buttermilk equals 80 calories.
An equal amount of gruel equals 75 calories.
A glass of albumin water (white of 1 egg) equals 20 calories.
A cup of beef tea or clear soup equals 5/20 calories.

134. **Phenolsulphonephthalin.**—The authors regard this test as simpler in technic and more accurate in its results than any of the other tests of renal function, although they are in doubt as to the accuracy of the test in chronic nephritis. They believe the test to be of great value in cardiorenal disease in indicating the organ principally or most importantly affected.

## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

## Lancet, London

*September 23, CLXXXI, No. 4,595, pp. 871-930*

1 *Two Cases of Extensive Excision of Colon and Ileum for Tuberculous Disease. A. E. Barker.
2 Operative Treatment of Malignant Disease of Pelvic Organs. A. Don.
3 *Three Cases of Congenital Heart Disease. Sir D. Duckworth.
4 Variability of Agglutination of B. Typhosus and M. Melitensis by Normal Sera and Its Importance in Laboratory Diagnosis. E. C. R. Fox.
5 *Mediterranean Fever: Its Influence on Fetus in Utero. R. Samut.
6 Accidents Which Have Occurred Through Color Blindness. F. W. Edridge-Green.
7 Bilharziosis and Ankylostomiasis in Egypt. G. W. G. Hughes.
8 *Roentgenotherapy of Sarcoma. J. D. Harris.
9 Acute Plastic Iritis, Markedly Benefited with Antistreptococcus Serum. A. A. Bradburne.
10 Case of Syphilitic Necrosis of Cervical Vertebra. F. X. J. Callaghan.
11 Portal Pyemia and Hemorrhoids. D. A. Alexander.
12 Prevalence of Pulmonary Tuberculosis in Merchant Service. M. MacKinnon.
13 Case of Myeloid Leukemia with Chylous Ascites. H. S. Furness and G. F. Stebbing.

1. **Extensive Excision of Colon and Ileum for Tuberculous Disease.**—Barker reports two cases. In one, the hepatic colon was clamped, divided, and its end turned in and sutured. The ileum was cut across over 2 feet from the valve and the whole tuberculous bowel with its mesentery and many infected glands removed from the abdomen as above. Then the end of the ileum was planted into the side of the transverse colon about 2 inches from its closed end. The whole procedure was a most complicated one owing to adhesion, infiltration and glandular infection as well as the difficulty of determining how much of the ileum should be taken, for many small tubercles were scattered widely. The cecum with 4 inches of colon and 27 of ileum were removed. In the second case a lateral anastomosis of ileum to middle of transverse colon was made after the removal of the cecum, ascending colon and hepatic flexure.

3. **Congenital Heart Disease.**—Mrs. B. was one of several daughters of a gouty man who was over 80 when he died. Her mother was also long-lived and appears to have suffered from some variety of chronic arthritis. Mrs. B. married at the age of 17; her husband died some years later from chronic dysentery. One son was the issue of this marriage. He has been healthy and vigorous and still survives at the age of 60, with some slight indication of a gouty proclivity. Mrs. B. married a second time a sufficiently robust man, aged 47 years, and had by him two sons and three daughters, all now living and healthy. Soon after this marriage she became very stout (arthritic obesity). After twelve years this husband died from cardiac dilatation and hemiplegia. Later, at the age of 37 years, Mrs. B. married a third time, the husband being a healthy man about 30 years of age. In this man's family there were signs of gouty proclivity in both parents. (His father died at the age of 79 years from the effects of interstitial nephritis. He had Heberden's nodes, and these also developed in others of his children in later life, with obvious gouty symptoms.) During her pregnancy with her first child by this (third) marriage Mrs. B. suffered from gouty pains in the joints and began to lose a good deal of her obesity. A female child was born at term, somewhat small and weakly, and with a languid circulation. In the course of the second year of its life it was still feeble and backward, although not rachitic, and had a tendency to dyspnea on exertion and progressive clubbing of finger-ends, with duskiness of the lips. An examination of the heart at this time revealed the existence of a murmur in the pulmonary arterial area. The child remained delicate and died from scarlet fever in its thirteenth year. There was no necropsy. Eighteen months later Mrs. B. gave birth to a second daughter. This child was with great difficulty made to breathe on delivery and was cyanotic. It lived only fourteen hours. A necropsy revealed a small opening in the septum ventriculorum and patent ductus arteriosus and extremely small pulmonary veins. The mother had suffered for some weeks during her pregnancy from severe gouty pains in various parts of the body. Two

years later she gave birth to a healthy male child, who is still living and robust and leading an active life.

In the course of the next three years Mrs. B. was found to be the subject of gouty glycosuria, little controlled by dieting. She lost weight very gradually and became feeble. She died at the age of 56 years from pleuro-pneumonia, having suffered from glycosuria in varying degree for twelve years. The husband has since his marriage had several gouty attacks of arthritis, lumbago and phlebitis. The third case of cardiac malformation occurred in the first child born to Mrs. B.'s son by her first husband. This son married a daughter of a distinctly gouty man, who had "regular" arthritic gout at intervals. Their first-born daughter showed obvious signs of congenital heart disease from an early date, suffering from dyspnea, some degree of cyanosis, and backwardness in growth. There was a murmur heard to the right of the sternum and the right ventricle was enlarged. This child hardly grew at all after eight or nine years of age and was very delicate. She died about the age of 13 years. A second daughter was born after this child and has maintained good health. The children by the second husband of Mrs. B. have all grown up in satisfactory health. The eldest and second of the daughters and one of the sons have married and had normal children. The third husband of Mrs. B. married a second time a daughter of an exceedingly gouty father and has had two healthy children by her.

5. **Mediterranean Fever and Fetus in Utero.**—The fetus in the case cited by Samut had been exposed in utero for twenty-one days to the influence of those abnormal conditions of the maternal blood consequent on a severe attack of Mediterranean fever. The child's blood and cerebrospinal fluid yielded a positive reaction to *Micrococcus melitensis* in large dilution. The *M. melitensis* could not be recovered from the internal organs of the fetus. The presence of agglutinins alone in this case raises the important question whether, in the absence of the *M. melitensis* in the fetal organs, they could have been elaborated by the fetal blood, or whether they were transmitted directly from the maternal to the fetal circulation.

8. **Roentgen-Ray Treatment of Sarcoma.**—Harris cites a case of round-celled sarcoma of the right angle of the lower jaw in which colossal doses of Roentgen-rays proved effective.

## Clinical Journal, London

*September 26, XXXVIII, No. 24, pp. 369-384*

14 Cervical Ribs. H. J. Waring.
15 Metrorrhagia. A. Routh.
16 Points of Otologic Interest in Connection with Injuries to the Head. S. Scott.

*September 27, XXXVIII, No. 25, pp. 385-400*

17 Eclampsia. T. G. Stevens.
18 Lupus Erythematosus and Its Treatment. J. L. Bunch.

## Medical Press and Circular, London

*September 20, XCII, No. 3,776, pp. 309-332*

19 *Ulcerative Colitis and Its Treatment. W. Murrell.
20 Treatment of Certain Diseases of Alimentary Tract by Roentgen-Rays, Combined with Internal Administration of Metallic Silver. F. Hernaman-Johnson.
21 Antepartum Hemorrhage Followed by Threatened Eclampsia. H. J. S. Kimbell.
22 Tuberculosis: Advanced Cases and Segregation. A. M. Williamson.
23 Infant Mortality and Employment of Women. E. Wardman-Wilbourne.

*September 27, XCII, No. 3,777, pp. 333-358*

24 Agitation and Its Treatment. P. Camus.
25 Chronic Catarrhal Otitis Media. C. A. Adair-Dighton.
26 Diagnosis and Treatment of Certain Chronic Lung Affections in Children. C. P. Lapage.
27 Review of Vital Statistics of Ireland Since 1864. Sir W. J. Thompson.

19. **Ulcerative Colitis.**—The following modes of treatment in Murrell's hands have proved inefficacious or of comparatively little value: (1) Opium and morphin in all forms given by mouth, hypodermically or in enemata, special attention being paid to Dover's powder and compound kino powder. (2) Carbonate of bismuth in large doses up to half an ounce every four hours, alternated with salicylate of bismuth. (3) Astringents including the perchlorid and pernitrate of iron, acetate of lead and sulphate of copper. (4) Intestinal antiseptics, such as *B*-napthol, salol and various preparations of formic-aldehyde. High rectal injections of boracic acid Murrell has found useful and in one of his cases (a) the injection of a 1 per cent. aqueous solution of a synthetical preparation of silver at a temperature of 80 F. completely stopped the diarrhea. The peculiarity of the case was that when about five pints had been introduced, the patient being in the knee and elbow position, the fluid was observed running out of the mouth and was identified not only by its physical characters but by chemical tests. Murrell is not in favor of appendicostomy. He says that a right-sided colostomy is in every way preferable and often gives immediate relief to the urgent symptoms. It is a difficult matter to decide when the artificial anus should be closed. If this step is taken at too early a period there may be a return of all the symptoms, while if too long delayed the colostomy may be permanent. Even with a permanent opening, the existence of the patient, especially in the case of a middle-aged man, need not be very uncomfortable and by the observance of simple precautions he is not precluded from the society of his fellow men. Murrell is sure, however, that in most cases it is better to attempt to close the opening at the expiration of about nine months.

## Indian Medical Gazette, Calcutta

*September, XLVI, No. 9, pp. 329-368*

28 Dengue-Like Fevers. A. C. Munro.
29 Quinin Without Tetanus. F. A. Smith.
30 Case of Tetanus Treated by Chloretone. V. St. J. Croley.
31 Case of Tetanus with Two Severe Relapses at Long Intervals. L. G. Fink.
32 Case of Malignant Edema. R. F. D. Macgregor.
33 Nature of Epidemic Fever in Lower Bengal Commonly Known as Burdwan Fever. U. N. Brahmachari.
34 Treatment of Granular Ophthalmia and Its Complications by Subconjunctival Injection of Solution of Cyanid of Mercury. R. H. Eliot.
35 Treatment of Local Sores by Carbon Dioxid Snow. W. W. Jendwine.
36 Two Unusual Cases of Head Injury. E. A. Walker.
37 Treatment of Acute Gonorrhea. W. L. Forsyth.

## British Medical Journal, London

*September 30, No. 2,548, pp. 717-780*

38 Treatment of Ante-Partum Hemorrhage. G. E. Herman.
39 *Malformation of Female Genital Organs in Their Clinical Aspects. A. E. Giles.
40 Inefficiency of Present Methods of Saline Infusion. N. S. Carruthers.
41 Painless Swelling of Parotid Secondary to Local Sepsis. C. E. L. Burman.
42 *Possible Toxic Origin of Some Forms of Insanity. E. Goodall.
43 *Different Types of Multiple Sclerosis. H. Oppenheim.
44 *Relation of Head Injury to Nervous and Mental Disease. F. W. Mott.
45 Puncture of Brain for Diagnostic Purposes. B. Pfeifer.
46 Need of Chemistry in Investigation of Mental Disease. R. V. Stanford.
47 Wassermann Reaction in Insanity. W. Muirhead.

39. **Malformations of Female Genital Organs.**—The malformations discussed by Giles and cases cited are as follows: 1. Malformations leading to confusion of sex. Case I.—A case of androgyny, the patient living as a married woman. 2. Malformations that preclude or are unfavorable to child-bearing, but allow menstruation and marriage. Case II.—Congenital retroflexion and under-development; hysteropexy; pregnancy. Case III.—Congenital occlusion of the Fallopian tubes. 3. Malformations that preclude child-bearing and menstruation, but not marriage. Case IV.—Infantile uterus; primary amenorrhea. 4. Malformations that preclude marriage and child-bearing, but not menstruation. Case V.—Stenosis of the vagina, probably acquired. Case VI.—Congenital stenosis of the vaginal orifice. 5. Malformations that preclude menstruation, marriage and child-bearing. Case VII.—Atresia of the vagina; hematocolpos; incision; infection; pyosalpinx. Case VIII.—Atresia of the vagina; absence of menstruation. Case IX.—Absence of vagina; hernia of an infantile uterus in the left inguinal canal. Case X.—Absence of vagina; rudimentary uterus; horseshoe kidney in the pelvis. 6. Malformations that allow of menstruation, marriage and pregnancy, but may be attended by complications. Case XI.—Uterus unicornis; pelvic right kidney; normal pregnancies. Case XII.—Uterus septus with fibromyoma. Case XIII.—Uterus bicornis with ovarian cyst. Case XIV.—Uterus bicornis; exploratory celiotomy. Case XV.—Uterus didelphys.

42. **Possible Toxic Origin of Insanity.**—The following observations are made by Goodall on mental disturbances in autotoxemia. These, amounting to insanity in predisposed persons, occur in various maladies in which the nutrition is

impaired, or in which metabolism and depuration are altered or hindered. Thus, in diseases of the heart, kidneys, liver; in rheumatism, gout or chlorosis; in diabetes. The like disturbances are found with Grave's disease, myxedema, Addison's disease (ductless gland diseases). In the hypothyroidism of myxedema Magnus Levy shows experimentally definite deviation from normal metabolism, removed by administration of thyroid. As the symptoms (including the mental ones) disappear or are greatly mitigated by such means, there is reason for the view that metabolic disorder accounts for the mental disturbances in this disease and if in this, then also, it may be, in other ductless gland diseases. When, however, it comes to administering thyroid or pituitary gland in kinds of insanity in which there is no ground for supposing the action of these glands to be deficient, in order "to promote metabolism," we are empirics, indeed; yet, like empirics, we sometimes do good in this way. Is there any record of the metabolism in these cases before, during and after treatment, asks Goodall.

43. **Multiple Sclerosis.**—Oppenheim regards it as a great advantage for the diagnostician to be familiar with all the different types of multiple sclerosis. But he should never forget that the disease is essentially characterized by the multiplicity of foci. And even when a case appears to be of a pure type it will be his first duty to find out whether some symptom is not present or has not existed that would be the manifestation of foci in some remote part. He only who complies with this exaction will be able to see his way through the vast field of multiple sclerosis.

44. **Head Injury and Nervous and Mental Diseases.**—Mott refers to autopsies in twenty-one cases of general paralysis. The average age at death was 46.5; among these there was not one with a history of head injury. There were 235 male pauper paralytics in whom there was not history of head injury in the notes and the average age at death was 43.5; there were 29 male pauper paralytics with a history of head injury of one kind or another occurring at all periods during the life of the individual; the majority, however, are stated to have occurred within a few months to a few years of the admission of the case to the asylum; the average age at death in these twenty-nine cases was almost the same as in those with no history of head injury, namely, 43.3. In only a very few instances does there seem to be any causal relationship between the injury and the precipitation of the onset, or the acceleration of the course of the disease.

In 1,033 male necropsies there were sixty-one with a history of trauma and of these, twenty-nine were cases of general paralysis (the total number of male paralytic cases was 317), making about 9 per cent. general paralytics in which there is some history of a blow or a fall on the head. Of the 111 female general paralytics, there were only four with a history of trauma, therefore less than 4 per cent. Mott has carefully considered the following points in those cases in which trauma has been the reported cause, or contributory cause, of the paralysis; and the evidence afforded by the notes in the case-books in his judgment does not in a single instance allow one to assume that the head injury was the principal cause of the general paralysis from which the patient died. In some instances the destructive changes in the brain at death, together with the history and clinical symptoms, indicated a duration longer than the period of time between the date of injury and the date of death; in others, and they are not a few, the time elapsing between the date of injury and the onset of symptoms was too long to be accounted responsible as an exciting cause of the disease; in a great number of the cases the nature of the injury, whether severe enough to produce a temporary loss of consciousness or to require medical treatment, is not given, nor is the time and date of the injury mentioned, so that the influence of the injury in the production of the mental disease can never be appraised.

As a general result of his investigations, Mott has come to the conclusion that head injury as an exciting cause was not of much importance either in causing the onset of general paralysis or in accelerating the symptoms. At the same time he has met with a few cases in which undoubtedly head injury may have been the determining cause of the onset of the symptoms and it is not unreasonable to suppose that a syphilitic, if he or she had not received some exciting cause, such as a blow on the head, might never have developed general paralysis, but these cases are rare. General paralysis may not be discovered until an accident or a head injury takes the patient to a hospital or infirmary. There is one essential cause of general paralysis and that is syphilis. All conditions which lead, in a non-syphilitic subject, to neurasthenia may act as exciting and contributory factors; they are sexual excesses, head injuries, alcoholism, speculating, gambling, business worries, leading to prolonged mental excitement and insomnia, in fact, all forms of nervous excitement, singly or combined, which will lead to an exhausted nervous system, especially when acting on an inborn neurotic and erotic temperament in the subject of acquired or inherited syphilis.

### Annales de Médecine et Chirurgie Infantiles, Paris

*September 1, XV, No. 17, pp. 529-560*

48 Simplicity and Ease of Puncturing the Pericardium Through the Epigastrium. (Ponction du péricarde par l'épigastre.) A. B. Marfan.
49 *Typhoid Fever in Infants. C. Achard and C. Flandrin.
50 *Relapse of Diphtheria After Measles. (Rechute de diphthérie après une rougeole.) L. Martin and H. Darré.
51 *Treatment of Malignant Diphtheria. (Traitement des angines diphtériques malignes.) M. Ségard.

49. **Typhoid Fever in Infants.**—Achard and Flandrin declare that the reason why typhoid fever is considered rare in infants is because no one thinks of applying serodiagnostic measures to babes in arms. And yet if this were done many a puzzling febrile affection in infants would be cleared up and the source of epidemics better traced. The typhoid syndrome in an infant simulates an ordinary gastro-intestinal trouble or meningitis or pneumonia. They report a case, the third in their experience. There was no history of typhoid in the environment but two sisters had died recently of supposed measles. The infant was 11 months old, breast-fed, and it recovered after a course of the typhoid of only thirteen days. The symptoms had been general depression and fever, diarrhea one day and then constipation, with vomiting. The lack of symptoms on the part of the lungs, intestines and meninges led to the suspicion of typhoid by exclusion. When the infant left the hospital its dejecta still contained typhoid bacilli. The treatment had been merely fifteen-minute tepid baths at 30 C. (86 F.) and regulation of the diet.

50. **Relapse of Diphtheria.**—A 2-year-old child had apparently recovered from a mild attack of diphtheria when he developed varicella and a suppurative otitis, followed by measles, all within two weeks. Three days after the onset of the measles, severe diphtheria developed. Martin and Darré explain this as due to interruption by the measles of the immunizing process going on in respect to the first attack of diphtheria. The measles sore throat opened up new portals of entry for the diphtheria bacilli still lingering in the throat. They state that the combination of measles and diphtheria has been unusually serious in their experience.

51. **Treatment of Malignant Diphtheria.**—Ségard emphasizes the necessity for intensive serotherapy in these cases and its harmlessness during the three weeks after the first injection, as signs of anaphylaxis do not develop until after this period. In malignant diphtheria the little patient should be watched hour by hour, examining the heart, pulse and urine as well as the throat, and giving antitoxin daily if necessary.

### Archives des Maladies du Cœur, Etc., Paris

*September, IV, No. 9, pp. 545-608*

52 Changes in the Action of the Auricles in "Perpetual Arhythmia." (Note sur les transformations de l'activité auriculaire dans l'arythmie perpétuelle.) C. Esmein.
53 The Granulated and the Stippled Blood-Cells. (Différences de structure et de signification des hématies granuleuses et des érythocytes ponctués.) W. Alexieff.
54 Perforation of Blood-Vessels by Gunshot Wounds. (Note sur les perforations vasculaires produites par les balles de revolver.) Argaud and Thomas.

### Obstétrique, Paris

*September, IV N. S., No. 9, pp. 777-823*

55 Malaria in Relation to Pregnancy, Labor and the Puerperium. (Le paludisme.) A. Laffont.

### Presse Médicale, Paris

*September 16, XIX, No. 74, pp. 737-744*

56 *Pediatrics in the Medical Course. (Enseignement de l'hygiène et des maladies des nourrissons dans les facultés de médecine.) A. B. Marfan.

57 Technic for Salvarsan Treatment. (Technique des injections intraveineuses d'arsénobenzol.) M. Leredde.

*September 20, No. 75, pp. 745-752*

58 *Aqueous Solutions of Salts in Therapeutics. (La médication dialytique.) G. Hayem.

59 Disturbances in Hearing and Vision After Administration of Hectine. (Troubles auditifs et oculaires consécutifs à l'emploi de l'hectine.) G. Ballet and C. Hischmann.

60 *Treatment of Congenital Torticollis. P. Desfosses.

61 *Treatment of Constipation and Gastric Trouble by Reclining on Right Side. (Stase gastro-duodénale et décubitus latéral droit.) A. Martinet.

56. **Infant Hygiene and Pathology in the Medical Course.**—Marfan cites statistics to show that the infant mortality in France has declined regularly from 258 per thousand in 1892 to 117 in 1909, and that the mortality during the first few weeks of life is due to congenital debility or syphilis, both of which have to be combated during the pregnancy or before conception. After the first few weeks the mortality is due to digestive disturbances which can best be warded off by breast-feeding under practical supervision. Indifference, poverty and ignorance on the part of parents and midwives are cooperating factors which must be fought. He even hints that the ignorance of infant hygiene on the part of some physicians is not a negligible factor and that the medical schools are responsible for this. He urges that the infant consultations, day nurseries and similar institutions should form part of the daily routine of medical students to train them in the diseases and physiology of young infants which branch of pediatrics is too often neglected in the medical course, and that there should be an examination in infant hygiene and pregnancy before conferring the medical degree. (See Berlin Letter in THE JOURNAL, October 14, p. 1299.)

58. **Dialytic Medication.**—Hayem applies this term to dilute aqueous solution of salts, artificial mineral waters, of which he uses five special types, corresponding to the Carlsbad, Vichy and other mineral springs. He has been using them daily for twenty years in his practice with more and more satisfaction for stomach trouble and constipation and for mucomembranous enteritis. He insists that the composition of the solution must be identical each time, the dose and duration of the course carefully defined. The dose should be taken in the morning on the fasting stomach, at a temperature of 104 F. No. 1 is a mixture of 2.5 gm. sodium bicarbonate; 3 gm. sodium sulphate and 1 gm. sodium chlorid to 1 liter of water. The freezing point is 0.255 C. This is indicated in dyspepsia suggesting hyperfunctioning on the part of the secreting glands (hyperpepsia). About 250 gm. is taken in all at twenty-minute intervals, continuing for twenty-five or thirty-five days, no longer, gradually increasing to 500 gm. He cites as contra-indications tuberculosis, heart disease with failing compensation and gastric cancer. He is inclined to ascribe the benefit from this treatment to its action on the liver and pancreas augmenting the receptivity of the duodenum and thus curing the symptoms from the hyperpepsia, notwithstanding that analysis of the stomach content reveals the persistence of the hyperchlorhydria and hyperpepsia, until the vicious circle is entirely broken up. His solution No. 2 contains 5 gm. sodium chlorid and 2 or 3 gm. sodium sulphate to the liter; it is taken fasting in doses of 200 or 250 gm. for four or six weeks as an aid in hypopepsia with a tendency to constipation, especially for patients who have been drugging themselves to excess. No. 3 is the same as No. 2 only that sodium phosphate is used instead of the sulphate. Both are mildly laxative. No. 4 contains sodium chlorid 3 gm. and sodium sulphate 5 gm. to the liter of water. It is useful for sluggish liver and in mucomembranous enteritis in doses of 300 or 400 gm., especially for hyperpepsia with constipation. No. 5 contains 10 gm. sodium sulphate and 5 gm. sodium chlorid to the liter of water. This is a powerful laxative and the daily dose should not be over 250 gm. and not taken for more than a week or two.

60. **Treatment of Congenital Torticollis.**—Ballet and Hitschmann insist on the necessity for wearing a correcting appliance and exercising the muscles after the sternocleidomastoid has been divided. The operation on the muscle is only the preliminary to these measures.

61. **Position Treatment of Gastroduodenal Disturbances.**—Martinet ten years ago called attention to the efficacy of position in treatment of disturbances in the stomach not due to a permanent mechanical obstruction or organic lesion. He has the patient recline on a bed or lounge when he feels discomfort, lying on the right side, the head raised a little, and in this position sip a glass of hot chamomile or linden flower infusion. The pylorus region thus becomes an upright funnel and the upper end of the duodenum slants downward so that the fluids which have passed through the pylorus do not accumulate and stagnate just beyond in what Holzknecht calls the duodenal bulb. Both duodenum and pylorus are soon emptied by the force of gravity.

### Revue de Chirurgie, Paris

*September, XXXI, No. 9, pp. 391-518*

62 *Ligation of Thyroid Arteries, Especially in Exophthalmic Goiter. (Ligature des artères thyroïdiennes principalement dans la maladie de Basedow.) X. Delore and H. Alamartine.

63 Sporothrix Elbow Arthritis. (Arthrite sporotrichosique.) Sorrel and Verdun.

62. **Ligation of Thyroid Arteries.**—Delore and Alamartine review the experiences in this line at Poncet's clinic at Lyons after a historical sketch of the subject and an illustrated discussion of the anatomy of the thyroid vessels. Experiments on animals seem to show that ligation of one or more of the arteries has no appreciable physiologic effect, but the gland shows histologic changes unmistakably reducing the total of functional capacity. The technic for ligation used by various surgeons and a detailed summary of the work in this line by Berg and Ackermann of Stockholm in fifty-two cases and by Kocher of Berne in fifty-nine cases are compared. Mayo's 225 cases are mentioned but the lack of details, they say, prevent comparison of results. The final conclusions from all these data are that ligation of the thyroid arteries is a logical and safe operation to reduce hyperfunctioning of the thyroid. Mayo's polar ligation of the superior arterial pedicle shuts off both vessels and nerves. When the inferior artery is to be ligated, the best mode of access is back of the sternocleidomastoid muscle. Vascular struma and exophthalmic goiter are the main indications for the ligation; it is contra-indicated in secondary exophthalmic goiter and in exophthalmic goiter of nervous origin. With extremely vascular exophthalmic goiter and in the rapidly progressive toxic forms, ligation of three or four arteries is urgently indicated, even if it is merely preliminary to a radical operation. In mild cases it is well to commence with ligation of the two superior arterial pedicles; if this proves ineffectual, follow with hemithyroidectomy. In cases of moderate severity commence by ligating both arteries of the lobe showing the greatest enlargement; then ligate the superior artery on the opposite side, and, if necessary, follow with a complementary hemithyroidectomy.

### Semaine Médicale, Paris

*September 20, XXXI, No. 38, pp. 445-456*

64 Technic for Gastro-Enterostomy. (La gastro-entérostomie de choix avec ou sans exclusion du pylore, dans l'ulcère du duodénum.) B. Schiassi.

*September 27, No. 39, pp. 457-468*

65 Present Status of Knowledge in Regard to Anaphylaxis. (Etat de nos connaissances sur l'anaphylaxie au cours des deux dernières années.) E. de Peyrelongue.

66 *Present Status of Arteriovenous Anastomosis for Gangrene of the Leg. (Que faut-il penser de l'opération de Wieting?) F. Lejars.

66. **Arteriovenous Anastomosis for Gangrene.**—Lejars compares the arguments presented by Wieting in favor of this operation and those who denounce it as unphysiologic and dangerous. Lejars comments that Wieting, himself, says that the operation is feasible only for young and vigorous persons, without infection and when the character of the gangrene is not directly menacing. In cases such as these, Lejars remarks, a spontaneous favorable outcome is possible while there is danger that this might be compromised by the operation's inducing thrombosis. He does not definitely reject the operation but he insists that those who apply it should fully understand the dangers they thus incur. See Abstract 78 below.

### Beiträge zur klinischen Chirurgie, Tübingen

*August, LXXV, Nos. 1-2, pp. 1-473*

67 Transplantation of Bone from the Cadaver; Three Cases. (Transplantation aus der Leiche.) H. Küttner.
68 Sterilization of Field of Operation with Tincture of Iodin. (Die Jodtinktur als Desinfektionsmittel des Operationsfeldes.) K. Fritsch.
69 *Experimental Research on Treatment of Acute Suppurative Arthritis. (Zur Therapie der akuten eitrigen Gelenkentzündung.) L. Dreyer.
70 *Movable Cecum. (Zur Frage des Coecum mobile.) L. Dreyer.
71 *Gangrene of Penis and Scrotum. (Die Gangrän des Penis und Scrotums.) H. Coenen and J. Przedborski.
72 Errors from Iodipin in Interpretation of Roentogram. (Jodipin im Röntgenbilde.) K. Fritsch.
73 Isolated Fracture of the Greater Tuberosity of the Humerus. (Zur Kenntnis des isolierten Frakturen des Tuberculum maius humeri.) E. Melchior.
74 Fracture of the Calcaneus. (Zur Beurteilung der Calcaneusfraktur.) K. Ludloff.
75 *Conservative Treatment of Prolapse of Rectum. (Eine neue konservative Behandlungsmethode des Mastdarmvorfalls.) A. Bauer.
76 Teratomas of the Pelvis. (Ueber Teratome der Kreuz-Steissbeingegend und der Bauchhöhle.) A. Bauer.
77 Hour-Glass Stomach. (Zur Klinik des Sanduhrmagens unter Zugrundelegung von 34 Fällen.) K. Spannaus.
78 *Arteriovenous Anastomosis. (Ueber das Problem der Umkehr des Blutstromes und die Wieting'sche Operation.) H. Coenen and Wiewiorowski.
79 *End-Results of Treatment of Exophthalmic Goiter. (Dauerresultate operativer und konservativer Therapie bei der Basedow'schen Krankheit.) M. Baruch.
80 Prothesis to Substitute Entire Lower Jaw; Two Cases. (Totalersatz der Mandibula.) H. Riegner.
81 *Transplantation of Parathyroids. (Die Epithelkörperchen-Transplantation in die Blutbahn.) F. Landois.

**69. Treatment of Acute Suppurations in Joints.**—Dreyer found it possible to prevent suppuration in experiments on animals by injection of various powerful disinfectants after infection. Phenol, salvarsan and tincture of iodin were particularly effectual and he thinks that the latter has a promising future in this line. He tried it in a few clinical cases with eminent success. In one patient, a tuberculous girl with an acute painful affection of the knee, after injections of 3 or 5 c.c. of a 5 per cent. tincture of iodin, diluted with alcohol, the pains subsided and the lesion healed as was seen at necropsy after the patient had succumbed to miliary tuberculosis. The pains subsided at once in another case in a woman of 62 with a severe tuberculous affection of the knee requiring amputation. In a third case a boy of 16 had multiple osteomyelitis. The involvement of the knee was treated by the iodin injections and speedily healed while the other foci dragged along a tedious course. The patella was left movable and the lad is regaining the use of his knee. Dreyer thinks that these experiences with iodin justify conservative measures in treatment of arthritis more than has been possible hitherto.

**70. Movable Cecum.**—Dreyer has been studying conditions on the cadaver to determine whether movability of the cecum can be regarded as pathologic. He states that in 67 per cent. of 105 cadavers, free from any history of special intestinal trouble, he found the cecum freely movable. He further experimented to ascertain whether cecopexy produced physiologic conditions, which he found rather dubious. Among the fifty-two female cadavers the cecum was freely movable in 79 per cent. and in the few in which it was fastened, it never occupied the position in which it is placed by the routine cecopexy.

**71. Gangrene of Penis and Scrotum.**—Coenen and Przedborski summarize the details of 203 cases and add three others from their experience. In many cases the trouble was a gangrenous erysipelas. In twenty-one cases the gangrene was a secondary process and the mortality was 18.5 per cent.; in twelve cases the gangrene developed from infiltration of urine and the mortality was 8.3 per cent. It was 21.4 per cent. in twenty-eight cases in which some mechanical or chemical injury or exposure to heat or cold was responsible for the process. In the 145 cases in which the gangrene occurred in the course of a local inflammatory process, the mortality was 22.1 per cent. Good results were obtained in some cases with the actual cautery. A plastic operation afterward is seldom necessary, especially for children and even for adults as Nature restores the defect sometimes most effectually, as is shown by some of the cases cited

**75. Treatment of Prolapse of the Rectum.**—Bauer has had six children wear a celluloid corset fitting around the waist and upper part of the buttocks applying elastic spring pressure to the fold between the nates just above the anus. This lifts up the sagging pouch of Douglas which he thinks is generally responsible for the prolapse, and in a short time of wearing the corset physiologic conditions are restored and the tendency to prolapse is cured. This result was accomplished in the above six cases in from two to several weeks.

**78. Arteriovenous Anastomosis for Gangrene.**—Coenen and Wieweorowski report experiments on twenty-six dogs and on eighteen cadavers attempting to divert the blood from the femoral artery into a vein, and review thirty-four cases from the literature in which this was done, and give another case from their own experience. The end-to-side anastomosis is generally known in Germany as Wieting's operation. Their final conclusion is that it does not deserve to rank as a feasible operation as it conflicts with the anatomy and physiology of the parts. In the thirty-five clinical cases death followed in less than two days in two cases; in twelve in a few days from erysipelas, phlegmon or collapse; in one case the large intestine became gangrenous four months later and amputation had to be done later in twenty cases. In only two of the total number were the end results favorable—in Heymann's and Wieting's cases. (Wieting replies to Coenen in the last *Zentralblatt für Chirurgie* and states that he now has a record of five cases, all successful, and that these results speak louder than Coenen's more theoretical objections. (See Abstract 66 above.)

**79. End-Results of Treatment of Exophthalmic Goiter.**—Baruch reviews the ultimate outcome in ninety cases of exophthalmic goiter treated at the Breslau clinic. These are the only ones that could be followed to date of 164 cases, including eighty-two patients treated by medical measures only. The survivors include forty who had been operated on and only twenty of the eighty-two treated by medical measures alone. Marked benefit or a cure was realized in all but six of the total forty surgical survivors, while not one of the surviving medical twenty can be regarded as cured and only two as improved, while 90 per cent. show no benefit. Comparing the findings in regard to the various symptoms in the medical and surgical cases confirms still further, he thinks, the superiority of operative treatment and should compel an early operation. Hitherto the cases have not been referred to a surgeon until after failure of all internal measures, but he insists that exophthalmic goiter should be regarded as a surgical affection from the start, and that only the most desperate cases should be left in the hands of the internists. After a four-year course the outlook for benefit from any measures is poor. In 46 per cent. of the cured survivors the duration of the disease had been only six months and in 84.8 per cent. less than two years. He adds that patients with exophthalmic goiter not only belong in the surgical ward but that they should be sent there early.

**81. Transplantation of Parathyroids.**—Landois reports discouraging results from extensive experimental research in this line. Even when the transplantation proved successful and the implanted gland retained its vitality and was constantly bathed with circulating blood, yet the experience failed in every particular, showing that there is little hope for successful transplantation in the clinic of organs with an internal secretion.

### Berliner klinische Wochenschrift

*September 25, XLVIII, No. 39, pp. 1741-1784*

82 *Birth Laceration of Atlas-Axis Capsular Ligament. (Zerreissungen der intervertebralen Gelenkkapseln der Halswirbelsäule, eine typische Geburtsverletzung.) F. Stoltzenberg.
83 Morbid Growths in Potatoes and Their Causal Agents. (Der Kartoffelkrebs und sein Erreger.) R. Behla.
84 *Hypernephroma Encroaching on the Heart. (Nierentumor—Grawitz—bis ins Herz fortgewuchert.) M. Kirschner.
85 *Meiostagmin Inoculation Reaction in Cancer. (Ueber Meiostagminreaktion *in vivo* bei bösartigen Geschwülsten.) G. Izar.
86 *Eye Diseases in South Sea Islands. (Weitere Untersuchungen über die Augenkrankheiten in der Südsee.) A. Leber and S. v. Prowazek.
87 Treatment of Lupus by the Two-Route Method. (Behandlung des Schleimhautlupus nach Pfannenstill's Methode.) O. Strandberg.

88 *Acetonuria in Pregnancy. (Ursache der Acetonurie bei Schwangeren.) O. Porges and J. Novak.
89 *Influencing of Temperature of Older Children by Slight Physical Efforts. (Beeinflussung der Körpertemperatur im späten Kindesalter durch geringe Anstrengungen.) A. Wolff.
90 *Syphilitic Heart Disease. (Ueber die syphilitischen Herzerkrankungen als Indikation und Kontra-indikation für die Salvarsanbehandlung.) M. Breitmann.
91 Dispensary Salvarsan Treatment. (Zur ambulanten Behandlung der Syphilis mit kleinen Salvarsandosen.) E. Simon.
92 Treatment of Pneumonia. (Behandlung der Lungenentzündung.) G. W. Schiele.

82. **Laceration of Capsular Ligaments During Delivery.**—Stoltzenberg found in nine out of seventy-five cadavers of new-born infants that the capsular ligament between the atlas and axis had been lacerated. The laceration was always circular and evidently occurred by traction on the cervical region of the spine, pulling it out of the longitudinal axis. The injury is liable to be fatal from hemorrhage into the spinal canal and meninges.

84. **Hypernephroma Encroaching on the Heart.**—In the case reported by Kirschner the first disturbances were not local but were in the form of heart symptoms with great weakness, long before symptoms called attention to the urinary apparatus. Then hematuria followed and a tumor was discovered in the left kidney; it proved on removal to be a hypernephroma from aberrant suprarenal tissue proliferating into the ascending vena cava with a tumor thrombus up in the right auricle. Jumping the right ventricle it had proliferated into the pulmonary artery. The symptoms on the part of the heart had been observed for five years, a year and a half before there were disturbances in the urinary apparatus. Kirschner reviews a few similar cases of malignant thrombus formation in the literature, Winckler having had two as extensive as this in his twenty-four cases of hypernephroma. Kirschner urges others to seek for symptoms on the part of the heart with tumors of this kind.

85. **The Meiostagmin Inoculation Reaction.**—Izar recently reported that he had found that an aqueous emulsion of an ether or methyl alcohol extract of malignant tumors or pancreas, heated for an hour to 50 C. developed extremely toxic properties. If a mixture of the extract thus heated and blood-serum is centrifugated, the toxic property is concentrated in the supernatant fluid in the non-cancerous cases while it is concentrated in the sediment when the serum is derived from persons with malignant disease. The technic is the same as for the meiostagmin reaction up to the centrifugation. The sediment is mixed with salt solution and this suspension is injected into rabbits. The rabbits die within twenty-four hours when the sediment is from a cancer case, and he calls this the "meiostagmin reaction *in vivo*." He obtained positive findings in nineteen of twenty-one cancer cases and in only two of thirty-two non-malignant cases. The findings with this and the original meiostagmin reaction were constantly parallel, except that in a very few instances the *vivo* gave positive findings with known cancer when the meiostagmin reaction failed.

86. **Eye Disease in the South Sea Islands.**—Leber and Prowazek report here the results of research undertaken on a commission from the institute for marine and tropical diseases at Hamburg. They found four types of eye disease on the island of Saipan, trachoma on some of the islands and a conjunctivitis in horses, like that already described at Samoa.

88. **Cause of Acetonuria in Pregnancy.**—Porges and Novak found intense acetonuria in two diabetic women free from sugar in the urine on antidiabetic diet. This and research on some normal pregnant women has demonstrated, they state, that acetonuria in pregnancy is the result of a relative deficiency of carbohydrates in the diet. The pregnant women seem to be less able to tolerate a deficiency in carbohydrates. The data learned from pregnancy acetonuria sustain still further the assumption of impairment of liver functioning under the influence of pregnancy.

89. **Influencing of the Temperature of Children by Slight Exertion.**—Wolff found that examination of the temperature in fifty children before and after they were told to run upstairs or take some other slight exercise, showed that this exertion caused a slight rise in temperature in thirty-seven of the children. Fluctuation in the temperature after slight exertion must be regarded as a typical normal property of childhood and by no means be accepted as an evidence of tuberculosis or other latent affections. Even a ten minutes' walk or climbing a flight of stairs may send up the temperature. He concludes that the temperature findings are reliable for comparison only when they are taken when the children are quiet in bed. It is possible, he adds, that sensitive children may have their vitality depressed by this rise in temperature which may explain why certain children feel exhausted after a walk instead of refreshed by it. Conditions are better when the children are playing, as in their play, movement and rest alternate more than in a promenade.

90. **Syphilitic Heart Disease.**—Breitmann had a monograph on this subject awarded a prize twelve years ago, and he has been studying it with special care ever since, with exceptional opportunities for research as, he says, syphilis runs its most triumphant course in the small towns of Russia, reigning unmolested by treatment until the patients are driven to the physician by severe tertiary manifestations. Syphilitic affections of the heart have certain characteristic symptoms although none is pathognomonic. Gumma in the heart is seldom diagnosed, as its slow development and its predilection for the "mute" regions of the heart cause its presence to be long unsuspected unless the physician tests the functioning of the heart muscle and finds signs of weakness. But this is the explanation for many instances of sudden death in the midst of apparent health, especially in the young or middle-aged. Breitmann, Mracek and Jullien found syphilis of the heart responsible for the sudden death in from 33 to 50 per cent. of such cases, especially after physical exertion, bicycling, hydrotherapeutic measures, straining at stool or excess in drinking, etc., or slight external trauma. Even in the earliest stages of syphilis there may be symptoms on the part of the heart from disturbances in the heart muscle of anemic or toxic origin, and many supposed rheumatismal heart affections and hemiplegias are in reality of syphilitic origin. This should be suggested by the rapid onset of the heart affection with no or slight fever, with sudden weakness in the midst of apparent health; death may occur suddenly or the trouble drag along for months or years without signs of valvular mischief and without being influenced by the ordinary heart tonics. Another sign is the apparent increase in the area of dulness, without murmurs or other objective signs, while the force of the heart-beat does not increase in proportion, that is, a strong heart-beat is accompanied by only slight filling of the arteries. A progressive gummatous affection should be suspected when the heart-beat is strong but not diffuse, with a rapid pulse and tachycardia, the sounds sharp, brief and pure. If the heart beat is stronger and its area larger, but the pulse small, the gummatous affection may be referred to the left ventricle. In a recent case there was abnormal pulsation in the left ventricle, while the heart beat was absent and no heart sounds could be heard—this case represents the extreme type. Certain patients feel a slight flickering uneasiness in the chest as the extrasystole starts; others feel as if their hearts stood still during the long pause; others notice particularly the powerful beat that follows the long pause. But most patients are unaware of the irregularity from the extrasystole. A special feature of syphilitic heart disease is the disproportion between the objective findings and the actual anatomic condition; also the youth of the patients—some of his patients were only 13 when the aortic aneurysm or insufficiency or arteriosclerosis developed—also the occurrence of intermittent dyspnea and syphilitic angina pectoris. With the latter there may be an unusual passive movability of the heart, propagation of the second aortic sound to the right and upward, and involvement of other portions of the nervous and vascular systems. The one great clue is the prompt benefit from treatment as for syphilis unless irreparable conditions are already installed. The main point is to spare the heart every unnecessary exertion, and especially spare it from the effects of strong drugs. He has known of cases in which digitalis had a fatal action on a heart weakened by syphilitic disturbances in conduction or a coronary affection. The first thing is to inform the patient of

the danger in which he stands from any physical exertion. During the Adams-Stokes syndrome, the patient may derive benefit from kneeling on his knees and elbows, the Mohammedan prayer attitude; the "Karell cure" may also prove useful. Breitmann's principle, he says, is to apply "chronic," vigorous, intermittent treatment during the earliest stages of a syphilitic heart affection, but the nearer the disease to the tertiary stage, the more the gummatous tendency in the heart has led to cicatricial changes or induration, the more cautious he is in regard to any vigorous treatment or measures of any kind. This applies in particular, he adds, to salvarsan. It may be possible with salvarsan to arrest the heart affection in its early stages and ward off trouble later, but it must be borne in mind that salvarsan has a very powerful action on the heart and circulation, especially if given intravenously as is the rule now. The elasticity of the vessels is much impaired in syphilis and careful search for symptoms on the part of the heart might have revealed some which would have contra-indicated the medication in some of the cases on record in which death followed the injection of salvarsan or over-vigorous mercurial treatment.

### Centralblatt für die Grenzgebiete der Med. und Chir., Jena

*August 30, XIV, No. 12, pp. 545-580. Last indexed August 26, p. 776*

93 *Diagnosis of Cancer. (Neuere Untersuchungsmethoden der Carcinomdiagnostik.) P. Saxl. Commenced in No. 10.

*September 16, No. 13, pp. 581-528*

94 *Pyelitis in Pregnancy. (Pyelitis gravidarum.) E. Venus. Commenced in No. 10.

93. **Modern Diagnostic Measures in Cancer.**—Saxl has been a pioneer in this line himself and here gives a summary of the various technics to induce a general or local reaction or utilize the natural reactions to differentiate malignant disease, explaining the scientific bases for each and the acceptance each has received from the profession. He says of the antitrypsin reaction (Brieger) that this is not strictly specific, at most in the sense that negative findings seem to exclude cancer. The meiostagmin reaction (Ascoli) seems to be giving reliable results, the findings being positive in almost every case of carcinoma and sarcoma and negative in the controls. But the technic is difficult. The cancer cell-destroying seroreaction (E. Freund) seems reliable and the technic simple except for the difficulty of obtaining the cancer cell material, as the cells of many cancers are not dissolved by normal serum, which is the basis of the test. The increase of oxyproteids in the urine in malignant disease (Salomon and Saxl) seems to be a constant phenomenon. Saxl found it in 70 per cent. of 500 cancer cases and only in five of a large number of controls. Various technics have been introduced for determining the proportion of oxyproteids, which are polypeptid bodies containing sulphur. Determination of the sulphur alone also throws light on the presence or absence of malignant disease. The technic for this is very simple: The sulphates and ethereal sulphates are removed from 150 c.c. of urine. Part of the remaining neutral sulphur is then oxidized out with dilute hydrogen dioxid and it becomes visible as a barium sulphate precipitate. Antipyrin and creosote disturb this reaction. Positive findings were obtained in 60 or 70 per cent. of the patients examined, especially pronounced with the still relatively well nourished patients, while the findings were constantly negative in 150 controls with a single exception, a moribund patient with cirrhosis of the liver. Of the reactions in the stomach content, Salomon's test has proved valuable, frequently disclosing the presence of an ulcerating gastric cancer, when all other signs had failed. A few benign ulcers give the reaction too. The technic is simple: The day before the patient eats nothing containing albumin, restricting himself to fluids. At evening the stomach is rinsed out clean and again in the morning with 400 c.c. salt solution. The rinsing fluid is filtered and tested for albumin and nitrogen. Positive findings with the Esbach test and a finding of 20 mg. of nitrogen testify to the presence of an ulcerating carcinoma. Many clinicians have published evidence in favor of the reliability of this test while three do not accept its findings, but Saxl commends the simple technic as indispensable in dubious cases. He does not think that the glycyltryptophan-splitting test has yet proved its right to existence, while the sources of error in the test based on the presence of a hemolytic substance in the stomach content render this test impracticable at present. In conclusion he cites without comment the latest contribution to the diagnosis of gastric cancer: Falk and Salomon's salicylate method. They give 3 gm. sodium salicylate in an enema and rinse out the fasting stomach the moment salicylic acid becomes evident in the urine. While the salicylic acid cannot be detected in the stomach fluid of the non-cancerous, with ulcerating gastric cancer, large proportions of salicylic acid are found in the stomach content; benign ulceration only very rarely permits the passage of the salicylic acid into the stomach.

94. **Pyelitis of Pregnancy.**—Venus gives a critical summary of 224 articles that have been published on pyelitis complicating pregnancy. The actual cause is not definitely established although stagnation of urine is evidently a prominent factor. Infection is generally ascending although it may be occasionally of blood-borne origin. The colon bacillus is generally responsible for it. Especial attention should be paid to a history of pyelitis in childhood. The diagnosis is usually simple but it may be necessary to exclude appendicitis, impending abortion and suppuration around the kidney. The prognosis is not absolutely favorable for the mother as complete restitution is seldom observed and there is liability to recurrence at later pregnancies, but there is no immediate danger to life. The prognosis is unfavorable for the child, as it is menaced by the tendency of the uterus to expel its contents during an attack of pyelitis and it may be necessary to interrupt the pregnancy artificially in the interest of the mother. Treatment should be conservative and expectant. Catheterization of the ureter and irrigation of the kidney pelvis are indicated in all severe cases and are often of great benefit. It is only rarely necessary to consider the question whether the pregnancy should be artificially terminated, but operative measures are required for serious degenerative processes in the kidney, such as pyonephrosis, multiple abscesses or calculi.

### Correspondenz-Blatt für Schweizer-Aerzte, Basel

*September 20, XLI, No. 37, pp. 929-960*

95 Psychiatric Notes. (Psychiatrische Mitteilungen.) G. Glaser.
96 Infectious Diseases in Youth in Etiology of Arteriosclerosis. (Aetiologie der Arteriosklerose.) S. Saltykow. Commenced in No. 36.

### Deutsches Archiv für klinische Medizin, Leipsic

*CIII, Nos. 3-4, pp. 291-432. Last indexed September 2, p. 853*

97 Etiology of Dupuytren's Contraction. (Zur Aetiologie der Dupuytren'schen Kontraktur.) W. Ebstein.
98 *Meningeal Symptoms with Infectious Diseases. (Ueber Meningismus bei Infektionskrankheiten.) L. Kirchheim and Schröder.
99 Blood Picture in Epidemic Cerebral Meningitis. (Das Blutbild der Meningitis cerebrospinalis epidemica und dessen diagnostisch und prognostische Bedeutung.) Ruscn.
100 Research on the Pulse. II. (Pulsstudien.) E. Edens.
101 Where Oxidation Occurs in the Organism. (Ort der Verbrennungen im Organismus.) P. Morawitz.
102 The Salt Metabolism in Health. (Beobachtungen über den Stoffwechsel des gesunden Menschen.) H. v. Hoesslin.
103 *Colloidal Nitrogen in Urine in Cancer. (Ueber den kolloidalen Stickstoff im Harne der Krebskranken.) S. Mancini.
104 Tumor in the Heart; Two Cases. (Zur Kenntniss der Pathologie und Symptomatologie der Herztumoren.) L. Ehrenberg.
105 *Sclerosis and Dilatation of Innominate Artery. (Sklerose und Erweiterung des Truncus anonymus.) E. Stadler and K. Albracht.
106 Diagnostic Importance of Elimination of Diastase in the Urine. (Diastaseausscheidung im Harn.) E. Marino.
107 The Antitrypsin Content of the Serum. (Die Antitrypsin des Serums.) H. Kämmerer.
108 Rising of Diaphragm During Deep Inspiration with Induced Pneumothorax and Paralysis. (Die paradoxe Zwerchfellbewegung bei künstlichen Pneumothorax und Zwerchfellähmung.) C. Wellman.
109 Importance of Epinephrin to Vital Processes. (Bestehen Beziehungen zwischen chromaffinem System und der chronischen Hypertonie des Menschen? Ein kritischer Beitrag zu der Lehre von der physio-pathologischen Bedeutung des Adrenalins.) E. Frank.
110 Outline of Heart with Congenital Heart Disease. (Form der Herzsilhouette bei den angeborenen Herzkrankheiten.) T. and F. M. Groedel.

98. **Meningeal Symptoms with Infectious Diseases.**—Kirchheim and Schröder report two cases in which an acute or chronic suppurative meningitis was found at necropsy although there had been none of the usual symptoms of this affection

during life until the agonal phase. These cases show that the anatomic and clinical features of meningitis do not always correspond. They also report five cases in which nothing was found at necropsy to explain the meningitic symptoms observed during life in the course of pneumonia or scarlet fever. In two other similar cases the microscope revealed specific changes in the meninges. The meningeal symptoms are evidently the result of toxic action. The question as to whether this meningism is only the first stage of meningitis is still undecided.

103. **Colloidal Nitrogen in Urine in Malignant Disease.**—Mancini says that determination of the colloidal nitrogen in the urine is a simple and easy process, and the findings in case of malignant disease seem to be constantly characteristic. The colloidal nitrogen is that portion of nitrogen which is precipitated in the urine by absolute alcohol (Salkowski). In all morbid conditions in which colloidal substances pass into the lymph and blood in larger proportions, as during absorption of effusions and exudates, and the kidneys are working properly, the amount eliminated is unusually large in proportion. This occurs with cancer but also with pleurisy, cirrhosis of the liver, suppurative processes, etc. Mancini tabulates the findings in a number of cancer and other cases. The proportion of colloidal nitrogen to the total nitrogen is about 3.42 per cent. in normal urine and about 6.48 per cent. in cancer. If the urine at first was alkaline he rendered it slightly acid with acetic acid, and if it contained albumin, he freed it from this by boiling. The total nitrogen was determined by the Kjeldahl applied to 5 c.c. taken from the twenty-four hour urine. He then evaporated 100 c.c. from the twenty-four hour urine to 10 c.c. in the water bath, then cooled it and added 100 c.c. of absolute alcohol to precipitate the nitrogen. After standing for several hours he filtered and rinsed the filtrate with alcohol until the rinsing alcohol showed no further trace of urea. The precipitate was then dissolved in hot water and filtered and the proportion of nitrogen determined by the Kjeldahl test.

105. **Sclerosis of the Innominate Artery.**—In the two cases reported by Stadler and Albracht the symptoms suggested an aortic aneurysm but roentoscopy revealed general arteriosclerosis, most pronounced in the innominate artery which was dilated but without an actual aneurysm. They discuss the differentiation of the resulting syndrome, especially the percussion findings.

### Deutsche medizinische Wochenschrift, Berlin

*September 21, XXXVII, No. 38, pp. 1729-1776*

111 Heredity Problems; Excess of Male Births. (Ueber die Frage des Knabengeburten-Ueberschusses und über andere Hereditätsprobleme.) E. Jendrassik.
112 Heredity from Psychiatric Standpoint. (Genealogie und Vererbungslehre vom psychiatrischen Standpunkt.) R. Sommer.
113 *Serotherapy of Epidemic Cerebrospinal Meningitis. (Serumtherapie der epidemischen Genickstarre.) G. Jochmann.
114 Technic for a Serodiagnosis of Syphilis. (Verwendung von Azetonextrakten zur Serumdiagnostik der Syphilis.) W. Kolle and O. Stiner.
115 *Surgical Complications of Otitis Media. M. A. H. Martens.
116 Improved Technic for Intubation in Diphtheria. (Erschwertes Dekanülement durch Vernähung der oberen Knorpelränder nach aussen zu beseitigen.) A. Hartmann.
117 *Salt Solution Responsible for By-Effects of Salvarsan. (Ueber Nebenwirkungen bei intravenösen Salvarsan-Injektionen, bedingt durch Kochsalzlösung.) E. E. Galewsky.
118 *Salvarsan and the Eye. (Salvarsan und Auge.) E. Reissert.
119 Volitional Contraction of the Pupil. (Pupillenverengerung durch willkürliche Muskelbewegung.) E. Schlesinger.
120 Dosage in Roentotherapy. (Zur Dosierung mit dem Radiomètre de Sabouraud et Noiré.) M. Levy-Dorn.
121 Quinin Effectual in Urticaria. (Zur Therapie der Urticaria.) W. Wolff.
122 The Darwinian Theory. (Die Darwinsche Lehre im Umschwung der Zeiten.) G. Fritsch.

113. **Serotherapy of Epidemic Cerebrospinal Meningitis.**—Jochmann reviews the history of serotherapy of this disease and his own experience with it, the indications and results. Success depends on commencing treatment early, he says, injecting the serum into the spinal canal, with not too small doses. The treatment is aided by raising the foot of the bed for 15 to 20 cm. for twelve hours after each injection. It seemed to be borne without discomfort by the patients as a rule, but morphin had to be given in a few cases. The patients usually regained consciousness after the injection, the cerebrospinal fluid cleared up and the condition grew progressively better. In two cases, commencing optic neuritis retrogressed under the serotherapy. He is convinced that with proper dosage and wider application meningococcus serotherapy of epidemic meningitis will save many patients.

115. **Surgical Complications of Otitis Media.**—Martens discusses in particular fracture of the skull with preexisting otitis media, acute or chronic. With existing infection the mastoid process should be opened and he relates some experiences in this line, showing the advantages of surgical treatment even when infection is only menacing, but he doubts whether it is necessary in all cases of fracture of the skull. He has operated in three cases of abscess in the cerebellum with chronic otitis media. One patient succumbed to the existing meningitis and sinus thrombosis; another survived for several weeks but succumbed to progressing encephalitis. In the third case a small boy with a cerebellar abscess recovered promptly after evacuation of the abscess. In Henke's compilation of twenty-three cases of cerebellar abscess, only one of the patients survived, while seventeen survived in fifty-three cases of abscess in the temporal lobe. Martens has cured two patients on whom he operated for an epidural abscess following otitis media, as also in several cases of sinus thrombosis of this origin.

117. **By-Effects with Salvarsan.**—Galewsky has treated 370 syphilitics in the last six months with intravenous injections of salvarsan. The by-effects were always slight and transient until in a group of cases there was a succession of annoying by-effects which he finally traced to the salt solution vehicle. Since he has been paying greater care to the production of the salt solution there has been no further trouble of the kind.

118. **Salvarsan and the Eye.**—Reissert discusses this subject from the standpoint of the ophthalmologist, after summarizing the eighteen cases on record in which injury of the eye followed the injection of salvarsan in from ten days to three months. He also reports a case from his own experience in which a young man previously healthy was given a subcutaneous injection of 0.4 gm. of salvarsan a few days after the primary chancre, and eight weeks later another of 0.5 gm. of salvarsan. There were no symptoms for two months but then pain in the right side of the head and face developed and right optic neuritis and retinitis. While the other symptoms subsided under mercurial treatment, the neuritis progressed and vision was lost. Comparison of this case with those on record has convinced Reissert that the optic neuritis was due to injury from the salvarsan stored up in the tissues from the two subcutaneous injections.

### Deutsche Zeitschrift für Chirurgie, Leipsic

*CX, Nos. 4-6, pp. 313-634*

123 Projecting Spur at Occiput. (Der Occipitumdorn, ein Beitrag zum Calcaneussporn.) J. G. Chrysospathes.
124 Partial Resection of the Kidney for a Cystic-Epithelial Tumor. (Ueber partielle Nierenresektion.) J. Fabricius.
125 Three Years of Appendicitis at Berlin Hospital. (Blinddarmentzündung.) T. Gümbel.
126 *Isolated Subcutaneous Rupture of the Trachea. Beyer.
127 *Treatment of Angiosclerotic Gangrene by Diverting Arterial Blood into Venous System. Wieting.
128 Invagination of Intestines. (Ueber Darminvaginationen.) H. Matti.
129 Extraperitoneal Embedding of Omentum in the Kidney as a Therapeutic Measure, Especially to Promote Diuresis with Ascites; Six Cases. R. Torikata.
130 Ideal Operation for Arterial Aneurysm. (Beitrag zur zirkulären Gefässnaht am Menschen.) K. Omi.
131 Intraperitoneal Rupture of Bladder. A. Galaktionow.
132 *Perforation of Ulcer in Duodenum. (Ueber den jüngsten bekannten Fall von Ulcus duodenum perforatum.) L. Imfeld.
133 Anatomic Bases for Transposition of Sphincter Portion in Resection of the Rectum. J. Fleissig.
134 Second Case of Operative Removal of Subpial Tumor in Spinal Cord. H. Brun.
135 Tuberculosis of the Testicles. (Experimentelle Beiträge zur Hodentuberkulose.) W. Tylinski.
136 Origin of Deforming Arthritis. Axhausen and I. Pels.
137 Benign Tumors in the Head. (Beitrage zu den gutartigen Tumoren der Kopfregion.) L. Arzt.
138 *Treatment of Suppurative Peritonitis with Saline Irrigation and Constant Heating of the Abdomen. Iselin.
139 Congenital Displacement of the Kidneys. (Zur Pathologie und Therapie der kongenitalen Nierendystopie.) A. Lindemann.
140 Free Transplantation of Fascia to Close Defect in Abdominal Wall and Fistula into Intestine. Rittershaus.
141 Myonephropexy. Jacobovici and Jianu.

126. **Isolated Rupture of the Trachea.**—The rupture occurred in a boy of 9 from a contusion. The trachea was exposed at once, a cannula introduced, and removed in four days, as recovery was prompt and uncomplicated. The rapid recovery in this case should encourage immediate operation for all isolated ruptures of the trachea, as serious complications are liable to develop otherwise at any moment.

127. See Abstracts 66 and 78 above.

132. **Perforated Duodenal Ulcer in Boy of 15.**—Imfeld reports a case of perforation of a duodenal ulcer in a boy of 15½, with operation at the seventeenth hour, after general peritonitis had developed. He attributes the boy's recovery in part, to the exact suture of the perforation, rinsing out of the abdomen and keeping the patient in a half-seated position. Imfeld comments on the better results with these operations in late years, the mortality having dropped since 1902 from 80 per cent. to 37.7 per cent. in Imfeld's compiled 122 cases in the last nine years. The symptoms in the case reported had been noticed for three weeks before the perforation, pain in the epigastrium coming on five or six hours after eating, until finally the perforation occurred, with intense pain above and to the right of the umbilicus, and signs of acute peritonitis followed.

138. **Local Heat in Treatment of Peritonitis.**—Iselin supplements rinsing out the peritoneum in case of suppurative inflammation by applying heat continuously to the abdomen. This stimulates the vital functioning of the intestines after the abdominal operation and also aids in combating the irritation of the peritoneum without pronounced inflammation. In the latter condition it promotes absorption while after operations the effect is more physical: the augmented evaporation in the hot-air box promotes the drainage of the peritoneum, rinsing it from within outward, as he expresses it.

## Jahrbuch für Kinderheilkunde, Berlin

*September, LXXIV, No. 3, pp. 237-366*

142 Action of Infant's Saliva in Beginning Digestion. (Wirkung des Speichels im Anfangsstadium der Verdauung beim Säugling.) G. Ballaria.
143 Antitoxin Treatment of Diphtheria. (Zur Frage der Antitoxindosen bei Diphtherie.) S. J. Fedinsky.
144 *Scoliosis Begins in Infancy. (Beginn der Skoliose.) E. Kirsch.

144. **Incipient Scoliosis.**—Kirsch insists that the tendency to scoliosis is acquired before the school age and that it should be carefully sought at all times in young children and especially those known to have rachitis. It is most readily recognized when the child lies prone on his stomach, the arms spread at right angles, the head turned first to the right and then to the left. Looking along the spine from the top and bottom, the eye on the same line as the spine or on the same plane on either side, any tendency to curvature is generally easily recognized and roentoscopy will reveal which of the vertebræ are abnormal in shape. Kirsch found curvature by this means in 5 per cent. of 196 children between 6 months and 2 years old. He urges immediate correction with a correcting bed as soon as the incipient scoliosis is discovered. Years may be necessary before normal conditions are restored. One of his patients is now 9 years old and has slept in the correcting bed since she was 2 and has lost all trace of the scoliosis although it was quite pronounced when first detected.

## Medizinische Klinik, Berlin

*September 24, VII, No. 39, pp. 1483-1526*

145 *Infant Feeding During First Two Weeks. (Zur physiologie der Milchsekretion und der Ernährung der Neugeborenen in den ersten Lebenstugen.) E. Opitz.
146 Therapeutic Action of Radium Emanations. (Klinische Beobachtungen über die physiologische und therapeutische Wirkung grosser Dosen von Radiumemanation.) C. v. Noorden and W. Falta.
147 Appendix Used to Close Defect in Male Urethra. (Ersatz eines Harnröhrendefekts durch den Wurmfortsatz.) E. Lexer.
148 Consequences for the Retina of Ligation of the Carotid Artery. (Folgen der Carotisunterbindung für das Centralgefässsystem der Retina.) A. Elschnig.
149 *Possibility of Influencing Tabetic Crises by Nerve Blocking. (Möglichkeit der Beeinflussung gnstricher Krisen durch Leitungsanästhesie.) F. König.
150 Operative Treatment of Exophthalmic Goiter. (Umfrage über die chirurgische Behandlung der Basedowschen Krankheit.) T. Kocher, P. Friedrich, der Quervain and others.
151 The Electrocardiogram in Experimental Research. (Ueber das Elektrokardiogram und die negative Schwankung des Froschherzens im Stadium schwacher Digitalisvergiftung.) K. Brandenburg and P. Hoffmann.
152 Treatment of Experimental Syphilis with Aromatic Mercurial Compounds. (Ueber die Behandlung der experimentellen Kaninchensyphilis mit aromatischen Quecksilberdicarbonsäuren.) F. Blumenthal.

145. **Infant Physiology and Hygiene.**—Opitz has had records kept of the temperature, stools, feedings and the weight in regard to 819 infants born at the Düsseldorf maternity. Of the 183 boys showing a tendency to jaundice, only 16.4 per cent. had regained their birth weight by the end of ten days, while 22.2 per cent. of the 230 free from icterus had regained it. The boys seemed to display this tendency to jaundice in much greater numbers than the girl babies and in a more intense form. His records show many interesting facts.

149. **Anesthetization of Spinal Roots for Tabetic Crises.**—König thinks that the benefits of rhizotomy may be attained in some cases of tabetic gastric crises without the necessity for an operation, merely by blocking the nerve roots involved. He urges others to try this method, and relates encouraging success with it in a single case. He used the Braun *Leitungsanästhesie* technic for deep paraneural injection of the anesthetic, injecting 100 c.c. of the fluid in the back, between the sixth and tenth ribs, at the emerging point of the nerves, forcing the fluid deep into the muscle on each side. He introduced the long needle close to the costovertebral articulation until it hit the rib; then it was drawn back a little, pointed upward to the upper margin of the rib and 5 c.c. of the fluid expelled at each point. The method differs from the epidural injection technic and it anesthetizes the nerve trunks for over six hours. It can be applied over and over again and if it proves possible thus to help the patients over the days of their tabetic crises in this harmless manner, much is certainly gained. It is possible, König adds, that this same paraneural technic might prove effectual for tabetic pains elsewhere, lancinating pains in the arm or leg. There is sometimes a local pain at the point of the injection, about two hours later, which he occasionally combats by subcutaneous injection of a small amount of some sedative. König's patient was a man of 44 who had severe gastric crises every month and finally every week with extreme exhaustion and loss of weight. The crises kept up for days at a time. The attack was arrested at once by deep injection of an anesthetic at the emerging points of the sixth to tenth dorsal nerve roots; 100 c.c. were injected at this time and three other attacks within the following week were likewise aborted, but not quite so successfully, possibly because not enough of the anesthetic fluid had been injected, the amounts ranging only from 65 to 80 c.c. instead of the 100 c.c. used the first time. The crises recurred after a month of peace, but the patient had left town.

## Monatsschrift für Kinderheilkunde, Leipsic

*X, No. 3, pp. 131-178*

153 Specificity of the Cutaneous Tuberculin Reaction. (Spezifizität der Pirquetschen Reaktion.) E. Tezner.
154 Acute Nephritis in Children After Impetigo; Twenty-One Cases. (Akute Nephritis bei Kindern nach impetiginösen Hauterkrankungen.) L. Kaumheimer.
155 Importance of Parathyroids for Tetany. (Bedeutung der path.-anat. Veränderungen der Glandulae parathyreoidae für die Pathogenese der infantilen Tetanie.) G. Jörgensen.
156 Adenoids and Hypertrophied Tonsils a Manifestation of the Exudative Diathesis. (Sind die adenoiden Wucherungen angeborenen?) A. Czerny.
157 Causes of Infantile Summer Mortality. (Ursachen der Sommersäuglingssterblichkeit.) H. Kleinschmitt.

*No. 4, pp. 179-238*

158 Chemical Reaction of Infants' Saliva. (Chemische Reaktion des Säuglingsspeichels.) G. Ballaria.
159 Distribution of Water in Infants Fluctuating in Weight. (Wasserverteilung im Säuglingsorganismus bei akuten Gewichtschwankungen.) N. Berend and E. Tezner.
160 Bromin Dermatosis. (Das Bromoderma im Säuglingsalter.) F. Scherer.

*No. 5, pp. 239-280*

161 Casein Clumps in Infants' Stools. (Befund von Kuhmilchkasein in Säuglingsstühlen.) J. Bauer. (Kaseinklumpen im Kinderstühle im Zusammenhang mit Rohmilchernährung.) Monrad.
162 *Influence of Neuropathic Taint on Course of Febrile Diseases. (Bedeutung der neuro- und psychopathischen Konstitution für den Ablauf fieberhafter Erkrankungen.) R. Lederer.
163 Bactericidal Substance in Human and Cow's Milk. Baktericidine in Frauen- und Kuhmilch.) H. Kleinschmidt.
164 The Spinal Cord in Tetany. (Rückenmarksuntersuchungen bei Tetanie.) J. Zappert.

162. **Influence of Neuropathic Constitution on Course of Febrile Diseases.**—Lederer gives a number of examples to show the danger of being misled by the behavior of a spoiled nervous child to assume organic nervous or brain trouble in the course of an acute febrile disease. The family physician, knowing the history of the child, is able to appreciate its vagaries at their true value, but the physician seeing the child for the first time is frequently at a loss. Treatment and care have to be strictly individualized in such cases, apathetic children roused, those with entire loss of appetite persuaded to eat or compelled to eat small amounts at brief intervals, the excited and sleepless soothed, and the children not further excited by too many therapeutic measures, packs, enemas, etc. The state of the nervous system in general should not be estimated from the behavior during an acute disease.

### Münchener medizinische Wochenschrift

*September 19, LVIII, No. 38, pp. 1993-2040*

165 Anatomy of the Muscles in the Orbit. (Ueber die Anatomie der glatten Muskulatur der Orbita und der Lider, speziell die Membrana orbitalis musculosa.) W. Krauss.
166 *Operative Treatment of Diffuse Peritonitis. (Die operative Behandlung des diffusen, speziell puerperalen Peritonitis.) K. Baisch.
167 *Sugar Solution in Biologic Treatment of Peritonitis. (Die biologische Behandlung der Peritonitis.) F. Kuhn.
168 *Tuberculosis and the Alleged Inherited Taint. (Ueber Umfang und Bedeutung der elterlichen Belastung bei der Lungenschwindsucht.) F. Reiche.
169 Favorable Influence of Mild Climate on Cardiovascular Disturbance. (Die Einwirkung des Klimas der Riviera auf organische und funktionelle Herz- und Gefässkranke.) Galli.
170 Streptococci in Relation to Abortions. (Ueber Vorkommen und klinische Wertigkeit der Streptokokken beim Abort.) O. Bondy.
171 Quantitative Test for Pepsin. (Ueber quantitativen Pepsinnachweis mit Angabe einer neuen Probe.) L. Kohlenberger.
172 *Early Ergot Treatment Responsible for Retention of Placenta. (Retention der Plazenta durch vorzeitige Sekaleverabreichung. H. H. Schmid.
173 *Hydrogen Dioxid Palliative Treatment of Cancerous Stenosis of the Esophagus. (Zur Behandlung des stenosierenden Oesophaguskarzinoms.) G. Liebermeister.
174 Laparo-Thoracoscopy. (Kurze Uebersicht über meine Erfahrungen mit der Laparo-thorakoskopie.) H. C. Jacobaeus.
175 Serpiginous Vaccinia. (Ueber einen eigentümlichen Verlauf von Impfpusteln.) E. Meder.
176 Prescribing of Male Fern. (Die Verordnung von Extractum Filicis Maris.) R. Drenkhahn.
177 Syphilis at the International Hygiene Exposition at Dresden. (Die Syphilis in der internationalen Hygieneausstellung zur Dresden.) M. Leibkind.

166. **Operative Treatment of Diffuse Peritonitis.**—Baisch reports nine cases of puerperal peritonitis from Döderlein's clinic at Munich showing the great advantages of prompt operative treatment in some of the apparently most desperate cases. He argues that there is nothing to be lost in these circumstances and everything to be gained. All the patients recovered whose infection was of endogenous origin while the four whose infection came from germs from without all succumbed. In one case nothing could be found to explain the infection from without until the woman told that finding herself bleeding profusely she had seized a scrap of soiled cotton and pushed it deep into the vagina herself. The most serious cases were always those with freshly imported septic germs. Baisch emphasizes the benefits from copious rinsing out of the abdominal cavity and free drainage. If the peritoneal cavity is already encapsulated above, drainage through the vagina is all that is necessary, but with diffuse and advanced peritonitis he provides for drainage through the vagina, the abdominal wound and both flanks, using large rubber drains. The benefit from these measures was particularly evident in a case of peritonitis following perforation during curetting of the uterus after abortion.

167. **Biologic Sugar Solution Treatment of Peritonitis.**—Kuhn analyzes the natural healing processes as the oozing out of a fluid to wash away the germs from the invaded tissues, this rinsing out process going on throughout the entire body to eliminate waste and poisons, supplemented by extensive arrangements for draining away the fluids. These facts suggest the proper aims in treatment, namely, to stimulate this oozing out of fluids, to supply plenty of fluid at other points so that the fluid will be passed along and increase the effusion at the danger points, and, further, to provide ample facilities for drainage. Kuhn then describes experimental and clinical research which has shown that a solution of sugar applied to an oozing surface has a remarkable osmotic attraction, materially enhancing the outward flow of the fluids in the tissues and thus promoting the auto-rinsing out of the peritoneum in case of peritonitic effusion. The sugar solution also answers the purpose of a rinsing fluid, and, supplemented by copious subcutaneous injection of physiologic salt solution, Nature's processes are imitated and intensified. The sugar solution attracting the fluids in the tissues outward, supplements the rinsing action of the physiologic solution injected elsewhere, while the sugar solution has the further beneficial faculty of dissolving fibrin, thus preventing the coagulation of fibrin and warding off the formation of adhesions and the growing together of parts. He has found that the physiologic sugar solution is a mixture of 4.1 parts grape sugar, 0.9 parts cooking salt and 100 parts distilled water. This solution does not affect the blood corpuscles nor the size of the drops in the body fluids, while it has a number of remarkable properties which adapt it for the biologic treatment of peritonitis. By stimulating the exudation it interposes a protecting sheet of fluid, constantly renewed as the fluid is drained away, and it also promotes production of antibodies and is bactericidal to a certain extent. By using a more concentrated solution, the osmotic attraction keeps up longer. Kuhn's method is to use the above sugar solution as we have been in the habit of using salt solution for rinsing the abdomen, and then toward the last he uses a more and more concentrated solution, finally leaving a certain amount of a 10 per cent. solution in the abdominal cavity.

168. **Family Infection Rather than Inherited Taint Responsible for Tuberculosis.**—Reiche reports the results of investigation of conditions in this line for 2,864 tuberculous policy holders in the Hansastädte Insurance Company. Everything tends to show, he says, the grave importance of family infection and the comparatively slight importance of inheritance in the development of tuberculosis. This dethroning of the old pessimistic theory of an inherited predisposition deprives tuberculosis of much of its horrors, as it shows how infection may be avoided and that no one is fatally doomed from birth.

172. **Retention of Placenta from Premature Administration of Ergot.**—Schmid reports a case of severe complications on account of the administration of ergot before the placenta had been expelled. He cites seven similar cases from German literature. In his case delivery had been normal; two hours later the cervix permitted passage of two fingers and there had been considerable hemorrhage, but no signs of severe anemia, no dizziness nor fainting. As there seemed to be no change in these conditions, in a few hours the physician gave ergot and sent the patient to the hospital where the cervix was found nearly closed. By this time fifty-five hours had elapsed since delivery of the child and there was a slight rise in temperature. After introduction of the inflatable bag for a few hours the placenta was evacuated by hand and the patient soon recovered.

173. **Hydrogen Dioxid a Palliative for Cancer of the Esophagus.**—Liebermeister found that when the esophagus was obstructed by a cancer and the patients were suffering from lack of food, it was possible to improve conditions for a time by having the patients sip every hour a 1 or 2 per cent. solution of hydrogen dioxid. Some of his eleven patients thus treated were restored to comparative comfort by this means and lived for months, able to take nourishment by the mouth. Of course the patients are given only food that will pass readily through the narrow passage. In case of absolute stenosis he feeds by the rectum for two or three days, during which the patients sip the dioxid solution, and then he begins with fluid food which is generally then easily passed along into the stomach. If this proves impossible, he gives a subcutaneous injection of 0.01 gm. morphin or 0.001 gm. atropin half an hour before each of the three meals.

### Wiener klinische Wochenschrift, Vienna

*September 21, XXIV, No. 38, pp. 1323-1350*

178 *Induced Pneumothorax in Treatment of Pulmonary Tuberculosis. (Zur Kompressionsbehandlung der Lungentuberkulose mittels künstlichen Pneumothorax.) R. Persch.
179 *Hemolytic Precipitation Reaction with Cancer. (Eine hämolytische Ausfallsreaktion.) G. Kelling.
180 Eosinophil Cells in Stomach Content with Gastric Achylia. S. Moncanin.

178. **Induced Pneumothorax in Treatment of Pulmonary Tuberculosis.**—Persch discusses this subject from various points of view and reports four cases to show the great benefits liable to be derived in certain cases. The effect surpassed all anticipations in his first case, the patient a woman of 27 with various complications of pulmonary tuberculosis of several years' standing. The second case shows the simplicity and ease of the technic and the benefit even of a brief course of treatment. In the third the patient was moribund but the fatal termination was postponed for over three weeks by the immobilization of the lung. The fourth case is particularly instructive; this patient was a young woman with rapidly progressing tuberculosis, apparently restricted mostly to the left lung, the exacerbation following childbirth. The pneumothorax was induced about five months after the childbirth and clinical recovery followed, notwithstanding an exceptionally unfavorable environment.

179. **Hemolytic Reaction in Cancer.**—Kelling reports further experiences with 200 cases which confirm his recent assertions in regard to a hemolytic reaction in the diagnosis of a not yet palpable cancer. The test seems to show that in the serum with cancer there is something which gives a specific reaction with chicken blood-corpuscles. His research has shown that there is not only a hemolytic ferment for fowl blood-corpuscles but also a hemolytic immune body, an amboceptoid and a substance which deviates complement. He describes the technic for this test and for a further hemolytic reaction in which hemolysis is inhibited.

### Zentralblatt für Gynäkologie, Leipsic

*September 23, XXXV, No. 38, pp. 1329-1360*

181 *Extradural Anesthesia. (Ueber extradurale Anästhesie.) F. Lieven.
182 *Menstruation After Curetting. (Ueber den Eintritt der Menstruation nach Abrasio.) F. Jaeger.
183 *Toxic Action of Blood Escaped Into Abdominal Cavity. (Ueber die Giftigkeit des in die freie Bauchhöhle ergossenen Blutes.) P. Bröse.
184 The Pulse After Rupture in Interstitial Pregnancy. (Ein seltenes Pulsphänomen bei innerer Blutung infolge von interstitieller Schwangerschaft und einiges über Herzkraft bei Blutungen.) W. Nacke.
185 Management of Umbilical Cord. (Ueber Nabelschnurversorgung der Neugeborenen.) W. Leube.

181. **Extradural Anesthesia.**—Lieven reports his experiences with an anesthetic injected according to Cathelin's epidural technic in six obstetric and fifty operative gynecologic cases. In the latter he used a very complicated technic, throwing the patients into a twilight sleep before making the extradural injection. In the obstetric cases the extradural technic has the disadvantage that anesthesia does not come on for about twenty minutes and that it puts an end to the abdominal straining during delivery. The introduction of the anesthetic is not always easy, and the anesthesia induced is not of long enough duration for protracted operations.

182. **Return of Menstruation After Curetting.**—Jaeger states that in twenty-five cases in which the curetting was done for endometritis and in twenty-five for the results of abortion, menstruation did not seem to be affected. He accepts this as evidence that menstruation does not depend on the uterine mucosa but on the functioning of the ovaries.

183. **Toxic Action of Blood in the Abdominal Cavity.**—Bröse reports three cases which show the possibility of an extremely toxic action from blood escaping into the abdominal cavity. Two of the women died. The chief symptoms were the paralysis of the entire intestines coming on the second or third day after rupture of a tubal pregnancy or operation for pyosalpinx or fibromyomas accompanied by much hemorrhage. The paralysis of the intestines was accompanied by high temperature and accelerated pulse, somnolency and agitation. According to his experience fluid blood seems to have a more toxic action than the coagulated.

### Gazzetta degli Ospedali e delle Cliniche, Milan

*September 14, XXXII, No. 111, pp. 1173-1178*

186 Immunizing Property of Extracts of Human Tuberculous Lungs. (Sulle proprietà immunizzanti degli estratti di polmone umano tubercolosa.) G. Romanelli and F. Morelli.

*September 17, No. 112, pp. 1179-1194*

187 Physical Syndrome with Lesions of Right Brain. (Sindromi fisiche da lesioni dell emisfero destro in destrimani.) T. Silvestri.

### Policlinico, Rome

*September 17, XVIII, No. 38, pp. 1193-1224*

188 Earth Worms as Conveyors of Cholera. (I vermi come veicoli d'infezione colerica.) B. Gosio.
189 Omentopexy for Cirrhosis of the Liver. (L'operazione del Talma nella cura delle cirrosi epatiche.) A. Monetti.

### Riforma Medica, Naples

*September 18, XXVII, No. 38, pp. 1037-1064*

190 Cultivation of Cholera Vibrio. (Nuove ricerche culturali sul vibrione colerico.) S. Fichera.
191 Difficult Diagnosis of Traumatic Lesions. (A proposito di alcune lesioni violente traumatiche, di diagnosi dubbia.) G. Monzardo.

### Hospitalstidende, Copenhagen

*September 6, LIV, No. 36, pp. 1001-1032*

192 Aggressin Action in Broth Cultures. (Aggressinvirkning i Bouillonkulturer.) I. P. Chrom.

### Nordiskt Medicinskt Arkiv, Stockholm

*XLIII, Internal Medicine, No. 4. Last indexed April 29, p. 1306*

193 *Chemistry of Nucleins. (Nobelvortrag.) A. Kossel.
194 *Experimental and Clinical Research on Diabetes. (Zur Diabeteslehre.) E. Landergren.

193. **Kossel's Research on Chemistry of Nucleins.**—This article is Kossel's summary of his biochemical research for which he was awarded the Nobel prize last winter. His work was reviewed editorially in THE JOURNAL, March 18, 1911, p. 817.

194. **Diabetes.**—This monograph on diabetes, based on extensive experimental and clinical research and experience, was awarded the Regnell prize in 1906.

## Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

PEDIATRICS. Edited by Isaac A. Abt, M.D., Professor of Pediatrics, Northwestern Medical School. With the Collaboration of May Michael, M.D. ORTHOPEDIC SURGERY. Edited by John Ridlon, A.M., M.D., Professor of Orthopedic Surgery, Rush Medical College. With the Collaboration of Charles A. Parker, M.D. Volume VII. The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Series 1911. Cloth. Price, $1.25. Pp. 237. Chicago: The Year Book Publishers.

THE PARASITIC AMEBAS OF MAN. By Charles F. Craig, M.D., Captain, Medical Corps United States Army. From the Bacteriologic Laboratory of the Army Medical School, Washington, D. C., and the Rockefeller Institute for Medical Research, New York. Published with the Authority of the Surgeon-General of the United States Army. Cloth. Price, $2.50. Pp. 253. Philadelphia: J. B. Lippincott Co., 1911.

MANUAL OF PATHOLOGY. Including Bacteriology, the Technic of Post-Mortems and Methods of Pathologic Research. By W. M. L. Coplin, M.D., Professor of Pathology, Jefferson Medical College, Philadelphia. Fifth Edition. Cloth. Price, $4.50 net. Pp. 1139, with 612 illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

ANNUAL REPORT OF THE INDIAN BRANCH OF THE ST. JOHN AMBULANCE ASSOCIATION. For the Year Ending Sept. 30, 1910. Published by the Authority of His Excellency the Viceroy, President of the Indian Branch. Paper. Pp. 139. Calcutta: Thacker, Spink & Co., 1911.

REPORT OF THE VETERINARY DIRECTOR GENERAL AND LIVE STOCK COMMISSIONER J. G. RUTHERFORD. For the Year Ending March 31, 1909. Printed by Order of Parliament. Department of Agriculture, Ottawa, Canada. Paper. Pp. 212, with illustrations.

HEALTH FOR YOUNG AND OLD. Its Principles and Practice. By A. T. Schofield, M.D., M.R.C.S., etc. Author of "Hygiene for Schools." Cloth. Price, $1.50. Pp. 300. New York: G. P. Putnam's Sons, 1911.

SECOND ANNUAL REPORT OF THE CHILDREN'S HOSPITAL AND TRAINING SCHOOL FOR NURSES, 2221 Downing Street, Denver, Colo. For the Year Ending April 1, 1911. Paper. Pp. 55, with illustrations.

FOOTPRINTS MADE IN THE DARK OR FOREWORDS OF THE PRESENT STATUS OF BACTERIAL ETIOLOGY. By A. G. Field, M.D., L.L.B. Des Moines, Iowa, 1863-1910. Cloth. Pp. 31, with illustrations.